The Mining Journal

RAILWAY AND COMMERCIAL GAZETTE.

FORMING A COMPLETE RECORD OF THE PROCEEDINGS OF ALL PUBLIC COMPANIES.

No. 753.---Vol. XX.] LONDON, SATURDAY, JANUARY 26, 1850. [Price 6d.

EXTENSIVE SALE OF MACHINERY, ENGINEERS' and MACHINEMAKERS' TOOLS, PATTERNS, and STOCK, LOCOMOTIVE ENGINES and TENDERS, &c., AT WALLACE FOUNDRY, DUNDEE.

MR. J. M. BEATTS has been instructed to SELL, BY PUBLIC AUCTION, within the Wallace Foundry, DUNDEE, on Tuesday, the 5th February next, and following days, commencing each day at half-past Ten o'clock A.M.,

THE WHOLE MACHINERY AND TOOLS

belonging to Messrs. Kinmonds and Co., engineers, who have resolved to discontinue that part of their business—comprising engineers' and machinemakers' tools of all kinds, heavy boring and turning lathes, large and small vertical boring machines, slotting machine, planing machines, screwing machine, self-acting and common turning lathes, from 7 inches to 18 inches high, with slide rests, &c., large cranes, smiths' and boilermakers' tools, vices, anvils, punching, rolling, and clipping machines, large boiler waggons, stock of boiler-plate, bar-iron, hardwood, &c.

THREE LOCOMOTIVE ENGINES and TENDERS; 12-horse High-pressure ENGINE.

Several sets of railway carriage and engine wheels and axles, and the whole stock of valuable patterns.

The business carried on by Messrs. Kinmonds and Co. was of a very extensive description, and the machinery and tools are for the most part new, and of the most approved construction. The stock of patterns is very extensive and valuable. The whole may be examined on the premises till the day of sale.

Catalogues may be obtained at the following places—viz.:

London—William Randall, Esq., 167, Fenchurch-street.
Antwerp—William Wood, Esq.
Dunkirk—David Dickson, Esq.
Leeds—Robert Berrie, Esq., Salem-place.
Newcastle—Messrs. John Spencer and Son, Sussex-street, Forth-street.
Hull—Messrs. Thompson, M'Kay, and Coy.
Liverpool—Messrs. Stewart and Cox, 15, Rumford-street.
Edinburgh—Messrs. James Tod and Sons, Leith Walk.
Glasgow—Messrs. Henry Brothers. 5, Dixon-street.
Dundee—At the works, and of Mr. J. M. Beatts, Auction Mart, 39, Reform-street.

Wallace Foundry, Dundee, Jan. 14, 1850.

GLAMORGANSHIRE—SOUTH WALES.

MR. THOMAS WILLIAMS will SELL, by AUCTION, at the Angel Inn, CARDIFF, on Thursday, Feb. 7th, 1850, at Three o'clock in the afternoon (unless previously disposed of by private contract, of which due notice will be given), all that recently opened Colliery, called, the

RHONDDA COLLIERY,

Situate on the side of the Rhondda Branch of the Taff Vale Railway, and about fourteen miles from the port of Cardiff, together with all the STOCK and PLANT; including a newly-erected ENGINE, 20 inches cylinder, 6 feet stroke, and FIVE WORKMEN'S COTTAGES.

The whole of the Minerals belonging to the above Colliery, consisting of the "Hafod," "Cymmer," and "Coffin's" celebrated seam of coal, are held under leases from Messrs. Edwards and Gething, about 94 years of which are unexpired.

The "Cymmer" seam of coal is worked by a pit of 25 fathoms depth, with an area of about 300 acres unwrought. "Coffins" seam underlies the latter about 30 fathoms, with an area of about 300 acres.

For view of the Works, inspection of the plans, or further particulars, apply to Mr. David Morgan, Coal-merchant, or to Messrs. D. and J. Thomas, Mining Engineers and Surveyors, Pontypridd.

FLINTSHIRE.—VALUABLE MINES AND COLLIERIES,

Consisting of SHARES in the TALACRE, TALARGOCH, HOLYWELL LEVEL, and NANT-Y-MWYN LEAD MINES, and the WHOLE of the MINES and MINERALS under an ESTATE at COLESHILL.

MESSRS. CHURTON have the highest satisfaction in calling the attention of the monied world to a SALE of MINERAL PROPERTY of unusual importance, inasmuch as the whole of the lots are extremely productive, with every prospect of increasing dividends, and which is appointed to take place at the Albion Hotel, in the city of CHESTER, on Friday, the 8th day of February, 1850, at Four o'clock in the afternoon, in lots to be determined upon by the vendors' agents at the time of sale, and subject to such conditions as will then be produced, consisting of—

5-28th SHARES of and in the TALACRE LEAD MINE, in the parish of Llanasa, in the county of Flint, held under leases for various periods.

761 SHARES (the whole into 2208 being divided), of and in that most important undertaking, the TALARGOCH LEAD MINES, in the parishes of Meliden and Dyserth, in the county of Flint.

1-15th PART of, or SHARE, in the HOLYWELL LEVEL LEAD MINE, held under various leases.

The whole of the MINES AND MINERALS in, and under an estate situate in the parish of Holywell, in the county of Flint, and comprising about 37 a. 3 r. 34 p. of land or thereabouts, now held by the Coleshill Colliery Company, under a lease, for a term of which 14 years or thereabouts are unexpired, at the annual reserved rent of £40.

N.B.—More descriptive particulars are in course of preparation, and will be ready for delivery six days prior to the sale, at the inns in Holywell, St. Asaph, Rhyl, Conway, Bangor, Carnarvon, Ruthin, Denbigh, &c., at the offices of Mr. Walker, solicitor, Chester, and Messrs. Roberts and Son, solicitors, Mold; or from Messrs. Churton, the auctioneers.

To ENGINEERS, MINING and COLLIERY COMPANIES, BREWERS, DISTILLERS, MANUFACTURERS, WHARFINGERS, and WAREHOUSE-KEEPERS, IRON-FOUNDERS, BUILDERS, and OTHERS.

IMPORTANT SALE OF SURPLUS RAILWAY MATERIAL, STEAM-ENGINES, PLANT, and MACHINERY, including 800 tons IRON.—MINORIES & BLACKWALL.

PULLEN & SON respectfully announce, that they have received instructions from the directors of the London and Blackwall Railway Company to SELL, BY AUCTION, at the Minories Station, and at the Terminus, Blackwall, on Monday, 11th February, and following days, at Twelve o'clock, in consequence of the alteration in the motive power on the line, the whole of the extremely valuable

PLANT AND MACHINERY

lately used in working the Rope, including 2 pairs of magnificent first-class STEAM-ENGINES, of 220 and 150-horse power each, constructed by Messrs. Maudslay & Field, and Mr. John Barnes, and in the best possible working condition; 7 large iron tanks, by Bramah, 26 feet square and 6 feet deep, gauging 25,000 gallons each, with brass valves, sluice cocks, &c.; 2 pairs of powerful hoisting machines for goods, by Ellis and Noton, of Manchester, to lift 5 tons each, with large break wheels, iron cradles, and apparatus; 4 24-feet diameter iron drum-wheels for coiling the rope, with large break and pinion-wheels, iron shafting, and plummer blocks; 4 vacuum pumps, with pipes, brass cocks, rods, and fittings; 4 20-feet diameter iron cog-wheels, with powerful driving and shifting gear; 1000 feet of 12 and 9-inch flange and socket pipe, 250 feet of 2-feet 6-inch iron shoots, 20 iron girders, iron columns and framing, 2 capital wrought-iron marine boilers, 10 feet square, with three furnaces in each, large quantity of sound brickwork, and other valuable material.

May be viewed on Friday and Saturday previous to the sale.—Catalogues had at the secretary's office, Fenchurch-street Terminus; at the superintendent's office, Blackwall; and of Pullen and Son, 80, Fore-street, Cripplegate.

TO ENGINEERS, IRON STEAM SHIPBUILDERS, MANUFACTURERS, & OTHERS.

TO BE SOLD, OR LET ON LEASE, EXTENSIVE MANUFACTURING PREMISES, with or without steam-power, and the valuable MACHINERY. The PREMISES are situate at BLACKWALL, having a water-side frontage of about 250 feet, near the junction of the River Lea with the Thames, possessing capabilities for building iron vessels upwards of 500 tons burden. The buildings have mostly been erected within a few years, at a cost of many thousand pounds. The situation also affords every facility for the transit of goods by land or water carriage, and coals can be landed direct from the colliers. The supply of water is unlimited, and free of expense. The Exchange and the public markets may be reached in little more than a quarter of an hour. The premises are applicable for any manufacturing business. The total area is 50,000 square feet, and the buildings are lofty, well lighted, and substantially erected.

The MACHINERY (the whole or any part of which may be taken or rejected) is of the best description, by the first makers, and with all the modern improvements, including a highly-finished STEAM-ENGINE and BOILER, 11 self-acting engine turning, boring, screw-cutting, and surface lathes, several planing, slotting, drilling, screwing, and shaping machines, 8 large grindstones, polishing wheels, all the requisite shafting and driving gear, 5 cutting and punching presses, smiths' forges and tools, cranes, triangles, and every requisite for the business.

The principal factory is fitted with a 25-ton travelling crane, working on an over-head tramway the whole length of the building, on to a strong timber double frame overhanging the river, for the purpose of erecting steam machinery in vessels, loading or unloading heavy weights, and transporting them to any part of the factory.

This establishment, from situation, extent, arrangement, and construction, together with the many local advantages it possesses, offers a most desirable opportunity to any person desirous of engaging in London in any trade requiring premises where space, contiguity to the docks, Exchange, and markets, the supply of coal and water on most favourable terms, and the speedy transit of goods at a low cost, are advantages of importance.—Further particulars, with lithographic plans, and cards to view the property, may be had of Messrs. Fuller and Horsey, Billiter-street, London.

VERY VALUABLE COAL MINES & COAL RAILWAY.—TO BE DISPOSED OF, BY PRIVATE CONTRACT, several valuable COAL MINES, situate in WEST LEIGH, on the Bolton and Kenyon Branch of the London and North-Western Railway, with the ENGINES, MACHINERY, FAST and LOOSE FIXTURES and UTENSILS, COAL RAILWAY WAGGONS, and CANAL BOATS, &c., late in the occupation of Mr. Samuel Fox (carrying on business under the firm of J. Handley and Co.) The railway, which is 2 miles long, forms a valuable communication to the canal and the London and North-Western Railway, not only for these mines, but for others in the district. The mines are held under leases for 21 and 25 years each, on moderate terms.

Full particulars may be obtained from Messrs. Duffield, Lofthouse, and Whitworth, accountants, Manchester; and from Mr. Janion, solicitor, Town Hall, Manchester.

FARMBROUGH COLLIERY, near BATH.—FOR SALE, a powerful and nearly new CONDENSING STEAM-ENGINE, with 31½-inch cylinder, 6-feet stroke, and excellent WINDING and PUMPING APPARATUS.—About 150 fathoms of 9, 8, and 6-inch PIPES, with suitable working barrels and rods for plunger and lifting pumps; horse drum, crab winches, round and flat-ropes, with a variety of useful COLLIERY MATERIALS.

A person on the premises will show the above; and for further particulars apply to Mr. Richard Evans, Grove Cottage, Timsbury, near Bath.

ASTURIAN MINING COMPANY—IN LIQUIDATION.—Notice is hereby given, that the REAL ESTATE, the CONCESSIONS of COAL and IRON MINES, and the WORKS of this company at MIERES DEL CAMINO, and in the adjacent districts; the QUICKSILVER MINES of LA EUGENIA, near Pola de Lena, and the COAL MINES at SANTO FIRME, situate in the province of OVIEDO, and principality of the ASTURIAS, in SPAIN, have been ordered by the Board of Directors and Liquidators TO BE SOLD, under TENDER; such Tenders also so include the Purchase, by valuation, in the usual manner, of the Stock in hand of all kinds, Implements and Articles used in the various departments of manufacture at the said works.

The Tenders to be subject to the approval of a general meeting of the company, to which is reserved the right of accepting the offer which may appear most beneficial to the shareholders of the said company.

A description of the property and the conditions of sale will be ready for inspection at Madrid with Messrs. H. O'Shea and Co., bankers, and E. Kelly, Esq.; at Mieres del Camino, with the company's superintendent; at Gijon, with J. J. Kelly, Esq., British Vice-consul; and at the company's offices in London, on and after the 2d February next. All tenders must be sent to the principal office of the company, 9, Austinfriars, London, on or before the 28th February next, addressed to "The Directors and Liquidators of the Asturian Mining Company," to whom also should be addressed all enquiries respecting the sale.—The works may be viewed on application to Mr. George Lambley, the superintendent at Mieres del Camino, in the Asturias.

By order of the Board of Directors and Liquidators,
K. MACKENZIE, Secretary.

Offices of the Company, 9, Austinfriars, London, Jan. 22, 1850.

COMBMARTIN AND NORTH DEVON LEAD AND SILVER SMELTING COMPANY.

REGISTERED UNDER THE JOINT-STOCK COMPANIES' ACT.

The SMELTING-WORKS of the above COMPANY are in ACTIVE OPERATION.—SAMPLES of LEAD and SILVERY ORES are requested to be forwarded to Captain Cornelius Bawden, Combmartin, near Ilfracomb, North Devon.

Payment for ores by bill, at three months, or cash if required.

Combmartin, Jan. 1, 1850. THOMAS L. WILLSHIRE, Secretary.

EAST BIRCH TOR TIN MINING COMPANY, DEVON.

Capital £7500—divided into 2500 shares, of £3 each.

Incorporated pursuant to Act of Parliament, 7 and 8 Victoria, cap. 110.

SEVEN HUNDRED SHARES REMAIN TO BE ALLOTTED.

This valuable MINERAL PROPERTY is situate in the parishes of NORTH BOVEY and MANATON, upon DARTMOOR, 18 miles west of Exeter, in the county of Devon.

The mine is held by this company for a perpetually renewable term of years, without fine or premium, at the very low dues of 1-25th of the realised value of the ores. It has hitherto been conducted on the Cost-book system, but was completely registered and incorporated under the Act 7 and 8 Vic., cap. 110, the 28th Nov., 1849, and a Deed of Settlement has been prepared pursuant to that Act, by which arrangements the liabilities of the shareholders and the method of conducting the business of the company have been defined, and the advantages of complete registration secured.

The affairs of the mine are under the management of a board of directors in London, chosen by the shareholders at their annual meeting. General meetings of the shareholders will be held half-yearly (10 days' notice being given), when a full statement of the company's affairs will be submitted to the shareholders. Ample provisions have also been made for an accurate and impartial periodical audit of the company's accounts.

The mine contains 10 distinct lodes—the richness of which has been fully and fairly tested—so that it is certain that, by the employment of about £1500 additional capital, it cannot fail to make a highly productive and dividend-paying mine. Birch Tor and Vitifer Mines, on the same lodes, and immediately adjoining East Birch Tor on the west, have returned a profit of upwards of £100,000 worth of tin.

The shafts, water-wheels, lift of pumps, stamps, workshops, and all necessary apparatus, are complete, so that the additional capital will be expended in sinking to a greater depth, driving levels, and raising tin.

There is ample water-power to work the mine to a great depth, whereby the large expense of a steam-engine is saved.

The mine has been brought to its present promising state by an outlay on the part of a small proprietary of £12,000. Of this sum £2500 were expended in driving the cross-cut adit to intersect the lodes and unwater the mine. Upwards of £5000 has been returned by the sale of ores from the present shallow workings; and it is confidently anticipated that, by the disposal of the 700 reserved shares, the company's funds will be amply sufficient to ensure complete success.

The object now is to cut the extreme north lode No. 1, which has proved so productive in the adjoining mine.

Some excellent rocks of tin have been recently raised from No. 5 lode, and the ore at the last sampling fetched £42 per ton.

2, Winchester-buildings, February, 1850.

WEST POLGOOTH TIN MINING COMPANY.

Capital £12500, in 2500 shares, of £5 each.

CONDUCTED ON THE COST-BOOK SYSTEM.

Deposit £1 per share.

OFFICES, 15, OLD BROAD-STREET.

This valuable MINERAL PROPERTY is that portion of the unworked ore ground in a line between the Great Hewas and the Great Polgooth Mines: in extent it is about three-quarters of a mile on the course of the lodes, and its mean breadth half a mile—held under a lease of 21 years from Lord Mount Edgecombe, at 1-18th dues. The Hewas Mine returned from one lode the greatest quantity of tin in the time of any mine in the kingdom. Polgooth is now making, at a large profit, returns of nearly £3000 per month; both these mines are more than 110 fathoms deep. West Polgooth Mine is only down 34 fathoms—consequently there remains above 70 fathoms of virgin ore ground for the present company to return before they reach the level of the adjoining mines, and which is computed to be sufficient to employ 800 persons for 20 years to come. The tin is of a very fine quality, and with an outlay of £6000, 35 tons of tin per month may be returned, yielding a profit of 25 per cent.

The management is by a London committee, and the works on the mine prosecuted at the lowest possible cost.

A prospectus, with lithograph plan and section attached, may be had by applying to Mr. Robert Williams, the purser, at Mr. Richardson's offices, 15, Old Broad-street, where the Cost-book, containing the names of the directors, the rules, reports, specimens, working plans, &c., may be seen, and of whom full particulars may be known.

WHEAL BENNY.—At the Meeting of the Finance Committee at the offices, No. 4, King-street, on Thursday, the 24th inst.,

R. T. BROWN, Esq., in the chair,

It was resolved,—That the remaining instalment of 10s. per share, out of the call of £1 per share, made on the 6th Sept. last, be now called up, and made payable at the Union Bank of London within 10 days.

JAMES CROFTS, Secretary.

4, King-street, Cheapside, Jan. 24, 1850.

MINERALOGY—KING'S COLLEGE, LONDON.—Professor TENNANT, F.G.S., will COMMENCE the SECOND PART of his COURSE, consisting of TEN LECTURES, on MINERALOGY, with a view to FACILITATE the STUDY of GEOLOGY, and of the APPLICATION of MINERAL SUBSTANCES in the ARTS. The Lectures will be illustrated by an extensive collection of specimens, and will begin next WEDNESDAY morning at Nine o'clock. They will be continued on each succeeding Wednesday.—Fee, One Guinea.

January 25, 1850. R. W. JELF, D.D., Principal.

THE ARTISAN CLUB ON THE STEAM-ENGINE.

New Edition, in 1 Volume, 4to., with 30 Steel Plates and 349 Wood Engravings, 27s., cloth

A TREATISE ON THE STEAM-ENGINE, in its Application to MINES, MILLS, STEAM NAVIGATION, and RAILWAYS.—By the ARTISAN CLUB. Edited by JOHN BOURNE, C.E.

"The third edition of Mr. Bourne's excellent work on the Steam-Engine * * * * in it many improvements and additions to the former publication have been introduced, which will render it of still greater utility and interest."—*Mining Journal.*

London: Longman, Brown, Green, and Longmans.

WATER FROM MINES.—NOVEL AND EXTRAORDINARY PROCESS of BACKING OUT WATER FROM MINES, recently adopted in France with great success (not patented).—A DESCRIPTION of this PROCESS, illustrated with diagrams, appears in the "PATENT JOURNAL" of Saturday, January 26th, price 6d.; stamped, 7d. In addition to this interesting article, there will be found much valuable matter to all engaged in the Arts, including Specifications of New Patents, Articles on Science, on the Exhibition in 1851, &c.—Subscription for the year for the country, £1 5s.—Sold by all booksellers, and published by Barlow & Payne, Patent Office, 89, Chancery-lane, London, and 2, Bennetts-hill, Birmingham.

THE MINING ALMANACK for 1850: compiled and arranged by HENRY ENGLISH, Mining Engineer, &c. Under the especial sanction and patronage of H.R.H. PRINCE ALBERT, Lord Warden of the Stannaries, Chief Steward of the Duchy of Cornwall, Devon, &c.—THE SECOND VOLUME will appear early in FEBRUARY next, with ADDITIONAL TABLES and STATISTICS, connected with the Mining Interests.—Names of subscribers are requested to be addressed to Mr. H. English, 25, Fleet-street.

SCREW PUMP.—WANTED, a SECOND-HAND SCREW PUMP.—The particulars, stating the bore, the length, the angle at which it is calculated to work, and the price, to be sent to Mr. Green, 5, Church-passage, Guildhall, London.

TO IRONMASTERS AND MANUFACTURERS.—TO BE LET, with immediate possession, the MINERVA IRONWORKS, situate in Horsley-fields, WOLVERHAMPTON, consisting of a MILL and FORGE, in complete working order; also a large WAREHOUSE adjoining.—Application to be made at Dr. Mannix's Rooms, Market-place, Wolverhampton.

TO MILL MANAGERS.—WANTED, in an extensive Iron-works in SOUTH WALES, a MILL MANAGER, who must fully understand the Process of Manufacture from the Blast-Furnaces to the finished Iron. Unexceptionable references must be given. The applicants must state their age, whether married or single, the name of the establishments where they have been previously engaged, and salary expected.—Applications (in writing) to be made to the Editor of the *Mining Journal*, 26, Fleet-street, London.

TO BE SOLD,—A MOST VALUABLE PATENT—applicable to a great variety of articles in every-day use, and which command an excellent profit to the manufacturer.—For further particulars apply to Mr. J. Baker, commission agent, Wolverhampton.

FOR SALE, BY PRIVATE CONTRACT, in LARGE or SMALL QUANTITIES—

300 cwts. of NEW STONE SAW PLATES, various lengths and gauges, at 7s. 6d. p. cwt.
70 cwts. of BEST CAST STEEL, various sizes, 45s. per cwt.
10 cwts. of SYKE'S (bellmark) BLISTER STEEL, at 36s. per cwt.
10 cwts. of BEST SHEAR STEEL, at 38s. Apply to R. MAY, Leadenhall-street.

STEAM-ENGINE FOR SALE.—TO BE SOLD, BY PRIVATE CONTRACT, a 33-inch CYLINDER STEAM-ENGINE, 8 feet stroke, equal beam, with Steam Case, Brass Air Pump, Boiler and Connections, and Capstan and Shears.—Application to be made to Mr. F. Pryor, Bell Cottage, Redruth.

Dated January 2, 1850.

CAMBORNE CONSOLS COPPER MINES, CAMBORNE, CORNWALL.—OFFICES REMOVED to 22, NEW BRIDGE-STREET, BLACKFRIARS.—London, January, 1850. H. L. T. VON USTER, Secretary.

COURT GRANGE SILVER-LEAD MINES, CARDIGANSHIRE.—OFFICES REMOVED to No. 22, NEW BRIDGE-STREET, BLACKFRIARS.—London, January, 1850. H. L. T. VON USTER, Secretary.

MAESTEG IRON-WORKS.—The ASSIGNEES of the MAESTEG IRON COMPANY having made ARRANGEMENTS with the MORTGAGEES, which have removed previous difficulties, are now in a position to TREAT for the SALE of the WORKS, MINERAL LEASES, and PLANT.

Particulars may be obtained by application to Messrs. Sewell and Fox, solicitors, 51, Old Broad-street, London; Messrs. Whittington and Gribble, solicitors; or Edward Mant Miller, Esq., official assignee, Bristol.—Jan. 8, 1850.

MR. EVAN HOPKINS, C.E., F.G.S., &c, CONSULTING MINING ENGINEER,

BARRINGTON-ROAD, BRIXTON, AND 13, AUSTINFRIARS, CITY.

MINING SHAREHOLDERS, and those who intend to INVEST their CAPITAL in MINES, requiring PERIODICAL ADVICE for their government, SURVEYING and INSPECTION of any description of MINERAL PROPERTY, may make an ANNUAL ARRANGEMENT, on moderate terms, on application (by letter) to Mr. HOPKINS.

MINE CAPTAINS and MINING ENGINEERS receive INSTRUCTION "How to Observe Mineral Property," as usual, by letter.

N.B.—All communications considered as private and confidential.

*** E. H. begs to return his thanks for the very kind expressions of confidence conveyed in the letters of those who have been guided by his advice during last year in England and on the continent, and the important benefit derived therefrom. He trusts it will continue to prove equally beneficial to all legitimate mines and miners.

MINING OFFICES, No. 3, GEORGE-YARD, LOMBARD-STREET, LONDON.—Mr. THOS. P. THOMAS is a BUYER of South Basset, South Frances, South Tolgus, West Wheal Jewel, Cook's Kitchen, East Buller, Wheal Seton, and Wheal Trelawny; and is a SELLER of Providence Mines, St. Ives Consols, West Caradon, Treviskey and Barrier, Wheal Comfort, and Tregorden.

Mr. T. P. THOMAS will at all times feel pleasure in giving information as to the Cornish, Welsh, and Foreign Mines, upon application.

MR. T. A. READWIN, MINING OFFICES, 2, *WINCHESTER-BUILDINGS, OLD BROAD-STREET, LONDON.*

MR. RYE is a BUYER in Stray Park, Treviskey, South Tolgus, Condurrow, and United Mines.—For particulars, apply at his office, No. 77, Old Broad-street, City.

MR. C. S. RICHARDSON, CIVIL ENGINEER, LAND AND MINING SURVEYOR.

No. 15, OLD BROAD-STREET, LONDON.

JAMES LANE, MINING SHARE DEALER, 80, *OLD BROAD-STREET, LONDON.*

BAROSSA RANGE MINING COMPANY—Notice is hereby given, that AN EXTRAORDINARY GENERAL MEETING of the proprietors in this company will be HELD at No. 13, Bedford-row, on Saturday, the 2d day of Feb. next, at Twelve o'clock precisely, to take into consideration, pursuant to a requisition of shareholders, the propriety of removing the offices of the company.

January 24, 1850. COODE, BROWNE, & KINGDONS.

CAMBORNE CONSOLS MINING COMPANY.—NOTICE TO SHAREHOLDERS.—The ANNUAL GENERAL MEETING of the shareholders in this company will be HELD on Thursday, the 21st day of February next, at 22, New Bridge-street, Blackfriars, London, at One o'clock precisely, for the general purposes of the company; and also to take into consideration the expediency of establishing regular monthly or bi-monthly meetings of shareholders in "Local Committee of Consultation," to be held on the mines. The aforesaid General Meeting will be made Special, for the purpose of modifying the directors' qualification, and to transact other business, of which the shareholders will receive notice by the circular letters calling the said meetings.

By order of the board, H. L. T. VON USTER, Secretary.

22, New Bridge-street, London, Jan. 25, 1850.

CONSOLIDATED COPPER MINES OF COBRE ASSOCIATION.—Notice is hereby given, that a SPECIAL GENERAL MEETING of the proprietors of this association will be held, at the office of the company, No. 26, Austinfriars, on Wednesday, the 30th instant, at 1 o'clock precisely, for the purpose of confirming the following resolution, passed at a Special General Meeting held on Tuesday the 8th instant:—"That the directors be and are hereby authorised to increase the amount of the reserved fund beyond the amount of £20,000, now limited by the Deed of Settlement; and that such increase be effected by adding to the present reserved fund five per cent. upon the dividend this day declared, and upon the dividends hereafter to be declared, until such reserve fund shall be made up and amount to the sum of £40,000.

By order of the Court of Directors,

26, Austinfriars, Jan. 14, 1850. WM. LECKIE, Secretary.

EAST BIRCH TOR TIN MINING COMPANY (Incorporated pursuant to 7 and 8 Vic., cap. 110).—Notice is hereby given, that the ANNUAL GENERAL MEETING of the shareholders will be HELD at the offices of the company, 2, Winchester-buildings, City, on Tuesday, the 12th day of February next, at Twelve o'clock precisely.

T. A. READWIN, Secretary.

London, January 23, 1850.

TAMAR SILVER-LEAD MINING COMPANY AND WORKS.—Notice is hereby given, that a SPECIAL GENERAL MEETING of the shareholders in this Company will be HELD at the offices, Salvador House, Bishopsgate, on Thursday, the 7th day of February next, at Two o'clock precisely, to take into consideration the payment of a dividend and other matters.

Salvador House, Jan. 10, 1850.

UNITED MEXICAN MINING ASSOCIATION.—Notice is hereby given, that the HALF-YEARLY GENERAL MEETING of proprietors of this association will be HELD at the office of the company, No. 5, Finsbury-circus, on Wednesday, the 30th day of January next, at One o'clock precisely, when the directors will recommend the payment of a dividend, at the rate of 7s. 6d. per share, payable on and after the 1st day of February, 1850, between the hours of Eleven and Three.

Forms for claiming the dividend to be obtained at the company's office, and must be left two clear days for examination previous to payment. Also the election of a director, in lieu of James Nelson Shoolbred, Esq., the present manager of the association in Mexico, will take place. Candidate—Henry Bunster, Esq., Exchequer Bill Loan Office, South Sea House, one of the present auditors.

The transfer book will, as usual, be closed on the evening of the 12th, and re-opened on the 31st of January. By order of a court of directors,

No. 5, Finsbury-circus, London, Dec. 27, 1849. JOHN MATHER, Secretary.

DIRECT MANCHESTER, LEEDS, AND YORK RAILWAY.—On Saturday the winding-up of this company's affairs came on before Master Brougham, on the petition of Mr. H. Dawson, barrister, who stated that the company was projected with a capital of 800,000*l.*, in 40,000 shares of 20*l.* each, and that shares were allotted, but in consequence of the panic few deposits were paid. Mr. H. Harris, on behalf of several contributories, opposed proceeding with the matter altogether, and the Master decided on adjourning the question for three months, to give the parties time for considering whether they should not petition the court to rescind the order for winding-up, since he was of opinion that it was a case in which no order for the purpose was necessary. He had been given to understand that the liabilities had been paid off, and applications of the kind could not be countenanced by the court.

TRING, READING, AND BASINGSTOKE RAILWAY.—On Saturday last, Master Richards decided in favour of the claim of the official manager to the estate on behalf of the shareholders, for the recovery of the sum of 6300*l.*, advanced by the directors, as an investment of the funds of the company, to Messrs. Cox and Sons, its stock-brokers, and who undertook to pay it with 5 per cent. interest, an engagement they had not fulfilled. Mr. Daniel appeared as counsel for the shareholders, and Mr. Folkes for Messrs. Cox and Sons; the latter contending, in a speech of some two hours, that the transaction was one of a purely private nature between the directors and his clients, and that, consequently, they were not liable to the company. The Master made an order for the payment of the money by March, with liberty to appeal to the Court of Chancery, where, should the order be confirmed, it will have the effect of increasing the dividend of 10s. already declared, by 1*l.*, per share, out of the deposit of five guineas originally paid by the shareholders.

LONDON AND WESTMINSTER COAL COMPANY.—On Monday this company's affairs came before Master Blunt, on the petition of Samuel Stanway, of 29, Granville-square, Pentonville. The club or company was started in April, 1848, to buy and sell coals and coke in London and other places, with a proposed capital of 30,000*l.*, in as many shares of 1*l.* each, with power to establish depôts and wharfs. The place of business was No. 142, Strand, and Robert Hope Gadesden, the projector, was appointed resident manager, at a salary of 600*l.* a year. Agencies were appointed in different parts of England, but the scheme was soon after attended with pecuniary embarrassment and loss. The petitioner, who took 500 shares and paid the deposit, was sued for the debts incurred, and taken into custody, where he now remains. The assets are insufficient to meet the liabilities, and actions are threatened by creditors against the shareholders. The directors drew bills or promisory notes in the name of the company, for debts due, and demands owing by them individually, and which the petitioner on affidavit, states had no relation whatever to the legitimate affairs of the company. He gave notice to the secretary, Frederick Devey, not to countersign any of these bills or notes, or in any way to abet the directors in these proceedings; but the company, notwithstanding, have not paid the debts for which the petitioner is in custody, nor indemnified him against actions at law. The Master proceeded with the list of contributories liable to a *pro rata* call to pay off liabilities, and several were placed on the list for this purpose.

BRIGHTON, LEWES, AND TUNBRIDGE WELLS.—On Tuesday the winding-up of this company's affairs came on before Master Sir W. Horne, on petition of Lord Alfred Hervey, M.P., which stated that it was started with a proposed capital of 350,000*l.* in 17,000 shares of 20*l.* each, deposit 2*l.* 2*s.* All the shares were allotted, but the panic supervening only 3486*l.* was paid out of the 35,700*l.* required. Petitioner and his co-directors paid their 100 guineas, but the outstanding liabilities amount to 5000*l.*, with only 700*l.* assets in hand. The Master proceeded with the cases of several of the shareholders, who were summoned to attend and show cause why they should not be liable to a *pro ratâ* payment in discharge of those liabilities. He decided that though they had neither paid the deposit nor signed the deed, but had only applied for shares and had them allotted, they were liable to be placed on the list of contributories, and to remonstrances replied that this was sufficient to make them amenable to the Act of Parliament, and that had it turned out a 10 per cent. concern they would have been the last to repudiate their responsibility. This decision will apply to 1100 shareholders, who stand in a similar position. A letter was received from Sir James Duke, whose name appeared on the list of contributories, denying that he had ever given authority for the use of his name in connection with the company, or that he had ever applied for shares. Lord Alfred Hervey, after some merriment and animadversion from the Master, produced a letter in the handwriting of Sir James Duke, addressed to Mr. Edwin James, one of the Provisional Committee, requesting an allotment of 100 shares.

ROYAL INDIA AND AUSTRALIAN MAIL STEAM-PACKET COMPANY.—On Wednesday, at the sitting of the Master's court, Mr. Yates, the projector and secretary of this company, was examined at considerable length with regard to its formation and failure. According to the requirements of the charter 250,000*l.* had to be subscribed, and the deed of partnership signed to that extent before the company commenced business on the line. The number of shares allotted up to the date of the deed in January, 1848, was 12,693, but only 3720 were paid upon, the directors having passed a resolution, making it optional on the part of the subscribers to reduce their number of shares. Many availed themselves of this, and one, a member of the Stock Exchange, who subscribed for 1000 shares, signed the deed for 160, and after giving an undertaking to sign for the remainder disappeared. Others who took 100 and 50 shares respectively signed for half the amount. Messrs. Maudslay and Field, and Messrs. Robinson, the engineers, conditionally on their having a proportionate execution of the company's works, took 1000 shares each, but the liability of the latter firm for these shares was subsequently cancelled at the last meeting by the company, on the 23d of January, 1849, by special minute of the meeting but which had not been signed by the chairman, it being customary to defer this formality until the next meeting in rotation. Mr. Robinson was one of the directors, and still stood on the list of contributors for 100 shares. Witness was also examined to show that he was an interested party in maintaining the liability of the contributories, having a claim for 3500*l.* on the company, consisting of 2000*l.* for 100 shares paid upon, and 1500*l.* for services as secretary, and for money advanced. If he did not obtain this out of the funds to arise from these proceedings, he would have to look to the directors. Capt. Hamilton, one of the directors, withdrew from the concern, not, he thought, on account of the excessive salaries that were proposed, but from duties that engaged him elsewhere.

LONDON AND MARGATE STEAM-PACKET COMPANY.—The list of contributories to this defunct undertaking is now being settled before Master Kindersley. From the proceedings it appears that soon after it was started, in 1845, it became utterly unprofitable, and unable to meet its liabilities, which amount to 30,000*l.* on the subscribed capital, with 10,000*l.* assets in hand.

DIRECT WEST-END AND CROYDON.—On Thursday, the winding up of this company's affairs came on before Master Tinney, on the petition of Capt. Hamilton, of Hampstead, which stated that the proposed capital was 800,000*l.*, in 40,000 shares, of 20*l.* each, the deposit being 2*l.* 12*s.* 6*d.*, in respect of which divers sums of money were paid to the acting committee, who have rendered no account, nor returned any portion to the shareholders. The court was excessively crowded, and several counsel appeared for the acting and provisional committee, whose names, amounting in all to 60, were included in the first-class list of the contributories. In the course of the proceedings, which occupied five hours, a great number of objections were taken to the form of the list as made out by Mr. Hollond, the official assignee; and Mr. H. Harris, his solicitor; also with reference to the character in which the parties were charged as contributories, it being contended that the only parties liable to pay the debts, amounting to 2000*l.*, were the parties who took shares and paid upon them, and not the provisional committee, who did neither, but contributed 75*l.* a piece, to liquidate, it is alleged, the liabilities of the concern. The second list contained the names of 1800 allottees, who, on paying 2*s.* 6*d.* per share, received back their letter of application; and the third list 400 names, who applied for shares, but to whom none were allotted.

LONDON, BIRMINGHAM, AND BUCKINGHAMSHIRE.—On Thursday, Master Kindersley appointed Mr. W. Goodchap, accountant, of Cheapside, to investigate the affairs of this company, the provisional committee of which consisted of a large number of noblemen and gentlemen, who incurred a large amount of debts in its prosecution, and which are still outstanding and unpaid, owing to the shareholders declining to pay the 2*l.* 2*s.* deposit.

LONDON AND MANCHESTER DIRECT RAILWAY.—Yesterday, the winding-up of this company's affairs came on before the Master in Chancery, Senior, on the petition of certain shareholders, of whom there was a numerous attendance. The scheme, projected to compete with the London and North Western, was to have a capital of 5,000,000*l.*, in 100,000 shares of 50*l.* each. Nearly all the shares were taken, and the subscribers' agreement signed by 1585 persons, in respect of which 125,000*l.* was received by the directors, the Hon. Colonel Stanhope, General Fitzgerald, Major Croft, Lieut.-Colonel Hutchinson, Major Waller, H. Arnold, M. T. Bass, J. Clarke, S. Hamer, J. Holford, D. T. Johnson, J. Keane, P. Livius, H. Miteyard, and J. Reade. The petitioners allege, on affidavit, that the directors, instead of depositing plans and sections, and three-fourths of the capital, as required, with the accountant-general, entered without the consent of the shareholders, into an agreement, which was not carried out, with a rival London and Manchester line, called Rastrick's, to the directors of which latter undertaking they paid over 40000*l.* as a consideration, without calling the shareholders together, and by which measure the former scheme was rendered abortive, and abandoned. Subsequently, the united companies went to Parliament; but the bill did not go through. Much litigation took place to obtain an account of moneys received and expended; but without satisfactory effect. An actuary reports the books are voluminous, but imperfect as regards bankers' accounts, cheques, counterfoils, and scrip signed, but not regularly issued; and that the secretary took away documents which have either been destroyed or placed in custody, at present inaccessible. The list of contributories was proceeded with on all surnames from A to P. Many out of those summoned to attend, professed that they had no recollection of having had anything to do with the concern until they recognised their signatures to the deed, which had the effect of placing them on the list. One of the chief objections raised was to the effect that the list of contributories was altogether illegal and informal, from its having been made out from the subscription deed, whereon the 125,000*l.* had been received, and which only bore a 1*l.* 15*s.* stamp; and this, it was contended, was altogether insufficient. The Master overruled the objection, and directed that the deed be taken to the Stamp-office, and supplied with the requisite rotation stamps, to render it a valid document, the cost to come out of the estate.

Transactions of Scientific Bodies.

MEETINGS DURING THE ENSUING WEEK.

THIS DAY	Westminster Medical—17, Saville-row	8 P.M.
MONDAY	Geographical—3, Waterloo-place	7 P.M.
	Entomological—17, Old Broad-street	8 P.M.
	Medical—8, Bolt-court, Fleet-street	8 P.M.
TUESDAY	Civil Engineers—25, Great George-street	8 P.M.
WEDNESDAY	Society of Arts—Adelphi	8½ P.M.
THURSDAY	Royal—Somerset-house	8 P.M.
	Antiquaries—Somerset-house	8 P.M.
FRIDAY	Astronomical—Somerset-house	8 P.M.
	Royal Institution—Albermarle-street	8½ P.M.
SATURDAY	Botanical—20, Bedford-street, Covent-garden	8 P.M.

INSTITUTION OF CIVIL ENGINEERS.

JANUARY 22.—WILLIAM CUBITT, Esq. (*President*), in the Chair.

The paper read was—"On the Periodical Alternations and Progressive Permanent Depression of the Chalk Water Level under London," by the Rev. J. C. Clutterbuck. The author began by defining the chalk water level to be, "the height to which the water rises at any point, or continuous series of points, in the chalk, *or from* the chalk in perforations, through the London and plastic clays, above the chalk. The term "Artesioid" was used to describe those wells sunk through the London and plastic clays, in which the water rose from the chalk, or the sands of the plastic clay formation, above the level of those strata, though it might not rise to, or overflow, the surface of the ground. Reference was made to papers read before the Institution in 1842 and 1843, in which it was shown that the chalk water level was described by an inclined line drawn from the highest level at which the water accumulated in the chalk, to the lowest proximate vent or outfall: a general rule, which was found to hold good, not only where the water was found by sinking into a permeable stratum, but where, as in the London basin, the water rose from a permeable stratum, through perforations in any impermeable stratum above it. The example treated of in the paper was described by a line, inclining at an average of about 13 feet in a mile, from the outcrop of the London and plastic clays, to mean tide level in the Thames, below London Bridge. The height to which water rose in the Paris Basin, from the lower green sand, was adduced in confirmation of that rule. Before the Artesian well at Grenelle was bored, M. Arago calculated, that the water would rise above the level of the soil at Paris, as it rose above that level at Elbeuf, near Rouen. The height at which the water was found in the lower green sand, near Troyes, being 100 metres above Paris, and 131 metres above the sea, the author found that a line drawn from that point, to the level of the sea at Havre (where the green sand cropped out), passed over Paris and Elbeuf at the elevation to which the water actually rose in both places.

A calculation, based on the some principle (taking the level of the water in the lower green sand, at Leighton Buzzard, at 280 feet above the sea) shewed, that if the chalk and gault were bored through in London, the water from the green sand would rise 150 feet above Trinity high-water mark. Passing from the natural to the actual condition of the chalk water level, under London, there was a general permanent depression of from 50 to 60 feet below Trinity high-water mark. Measurements of a well in London, in which the level was seldom disturbed, shewed periodical alternations, coincident with the exhaustion and replenishment of the chalk stratum by natural causes, to the amount of 4 feet 6 inches, and a permanent depression of 1 feet 6 inches per annum, or 12 feet in eight years. Again, referring to former calculations, it was shown, that the margin of this depression was extending in a greater ratio towards the north than to the south, or south east. Since 1843, the level was permanently depressed at Hampstead-road, 10 feet; Camden Town, 19 feet; Kilburn, 20 feet; and Cricklewood, 10 feet. The limit of the depression being, in 1843, between the latter places.

Allusion was then made to the influx of water at the point where the Thames passed over the outcrop of the sands of the plastic clay formation and the chalk, as a point to be determined by geological enquiry, and connected with observations as to the action of the tides on the level, and the chemical quality of the water in that neighbourhood.

The general conclusion drawn from all these facts was, that the rapidity of exhaustion from Artesian wells under London greatly exceeded the rapidity of supply; that the amount of defalcation was marked, and could be measured by the extension of a progressive permanent depression, proving that the supply of water from the chalk stratum became each year more precarious, and less to be depended upon, even should there be no addition to the Artesioid wells in and around the metropolis.

In the discussion which ensued, it was shown that only such a supply of water percolated annually through the chalk stratum as could be accounted for by the discharge from the rivers of the upper district. The results yielded by Dalton's rain guage, as used by Mr. John Dickinson, were adduced in proof of this position. The chemical analysis of the water from wells sunk into the chalk, showed the probability of an influx of the tidal water of the Thames, to replenish the vacuum caused by the immense extent of pumping from the London wells. On the other hand it was contended that, from the great extent of surface whence the chalk derived its supply, there might be such a surplus store of water, as would warrant any amount of pumping for the domestic supply for the metropolis.

The discussion was announced to be continued at the meeting of Tuesday, January 29, which would be entirely devoted to it.

INSTITUTION OF MECHANICAL ENGINEERS.

The third annual general meeting was held on Wednesday last, at the Queen's Hotel, Birmingham,—Mr. M'CONNELL (in the absence of the president, Robert Stephenson, Esq., M.P.) presiding. The first business was the election of officers for the ensuing year. The president was unanimously re-elected. The CHAIRMAN said, it was only fitting that some memorial to the late George Stephenson, Esq., should be raised, and it could, perhaps, emanate from no better source than the institution over which he presided with so much honour and benefit. —Mr. Alderman GEACH proposed that steps should be taken to raise such a memorial, the nature of which is to be hereafter determined upon, according to the amount of the funds subscribed.—The proposition was seconded by Mr. BUCKLE, and carried by acclamation.—The paper "On Railway Axles," read by Mr. M'CONNELL, at the last meeting, was taken into consideration, and some additional information, which had come into the reader's possession, was supplied by him. As the subject of the paper was one in which the president took a lively interest, it was, after a lengthened discussion, allowed to stand over for further consideration at the next meeting.—An elaborate paper "On Railway Springs," by Mr. W. A. ADAMS, of Birmingham, embraced a review of some twelve or fourteen buffer springs already constructed, and employed in the working of railways. The paper, after affording an opportunity for the expression of a variety of opinions, was also deferred for further discussion at the next meeting.—A paper by Mr. W. SMITH, of Dudley, "On the Condensation of Steam, with a series of Indicator Figures," showed that, owing to the improper construction of engines, a loss amounting to upwards of 280,000*l.* was incurred by proprietors of them in this district. Owing to the pressure of time, the consideration of this paper was postponed, without any discussion, to the next meeting. From the same cause the paper of Mr. George Heaton, of Birmingham, "On balancing the Resistance of the Air-pump in Condensing Engines," was not read.—*From the Midland Counties' Herald of yesterday.*

[We shall give, as usual, detailed reports of the papers and discussions—possibly, in our next Journal.]

TESTIMONIAL TO MR. DOCKRAY, RESIDENT ENGINEER ON THE NORTH-WESTERN RAILWAY.—As a testimonial of respect for his well-known and uniform integrity of character, Mr. Dockray has had the proud gratification of being presented by his brother officers in the London and North-Western Railway, and by other gentlemen professionally connected with him, with a half-length portrait of himself, painted by Phillips, accompanied by a purse of 60 sovereigns, and 500*l.* of London and North-Western Stock at par. Mr. Dockray was, moreover, presented at the same time with an elegant silver service of plate, of the value of 198*l.* Both portrait and service bear the following inscription:—"This service of plate, together with his portrait, and 500*l.* London and North-Western Railway stock, was presented to Robert Benson Dockray, Esq., M.I.C.E., resident engineer of the London and North-Western Railway, by 700 subscribers, consisting of his brother officers, and private friends, as a testimonial of their respect and esteem, November, 1849." The portrait has been engraved in masterly style by T. L. Atkinson, Esq.

The acting engineer to the London and South Western Railway Company, Mr. Abinus Martin, having retired from the company's service, has just been presented with a most flattering testimonial of the light in which his character and conduct during a lengthened servitude has been estimated. The gentlemen and *employés* on the line, to the number of 1200, have just had executed three massive silver salvers and a cake basket, of the same precious metal, to be presented to Mr. Martin, as a remembrance of his connection with the subscribers. The plate is most elegantly chased, and the design not the less faultless because simple, the surface being lightly embellished with scroll work. The larger salver, about 20 inches in diameter, contains the following inscription:—"Presented, with other plate, by 1235 fellow-labourers, to Albinus Martin, on his retirement from the London and South Western Railway Company, after a long and faithful discharge of the duties of acting engineer, in grateful remembrance of the kindness and goodness which have ever marked his conduct to those associated with him."

The *Volcano* steam-vessel, 140-horse power, has been taken into Woolwich Dock to have her bottom cleaned and examined. Although covered with copper-sheathing, it has been found covered to a considerable extent with shells and corals, several of the clusters being of nearly three inches projection, which must have greatly impeded her progress.

Proceedings of Public Companies.

MEETINGS DURING THE ENSUING WEEK.

THIS DAY	Australian Trust Company—offices, at Twelve.
	Belgian Eastern Junction Railway—London Tavern, at One.
MONDAY	West of London and Westminster Cemetery Company—office, at One.
TUESDAY	London and Brighton Railway—Bridge House Hotel, at One.
	Reliance Mutual Life Assurance Company—offices, at One.
	London and Greenwich Railway—offices, at Two.
WEDNESDAY	United Mexican Mining Association—offices, at One.
	Consolidated Copper Mines of Cobre Association—offices, at One.
	Holyford Copper Mining Association—offices, at Twelve.
	National Life Assurance Company—offices, at Twelve.
	Ratcliff Gas-Light and Coke Company—London Tavern, at Two.
	Continental Cattle Steam-Ship Conveyance Company—George and Vulture Tavern, at Six.
THURSDAY	Llanelly Railway and Dock Company—King's Head, Poultry, at Two.
SATURDAY	Barossa Range Mining Company—offices, at Twelve.
	Law Life Assurance Company—offices, at half-past Eleven.

ST. KATHARINE DOCKS.

The annual general meeting of proprietors was held on Monday, the 21st of January, at the Dock-house, Tower-hill,

THOMAS TOOKE, Esq., in the chair.

The SECRETARY read the notice convening the meeting, upon which the CHAIRMAN addressed the proprietors, and observed, that it had been usual hitherto, on such occasions, to make a verbal statement of the affairs of the company, as suggested by a view of the annual accounts; but it was considered to be a more convenient course, and one which had been adopted by the other dock companies in the port of London, to make the exposition in the form of a report, to be read by the secretary, who would read the same accordingly.

Sir JOHN HALL then read the report, as follows:—

The accounts of receipt and expenditure of the company for the year ended 31st Dec. last have been accessible for inspection by the proprietors during the last 14 days, and copies of them are now on the table.

By these accounts it appears that the general balance in favour of the company was, on the 1st January, 1849..... £92,364 6 10
And on the 1st January, 1850 ..... 86,449 11 3

Thus being less by..... £ 5,914 15 7

And it appears also that the net earnings of the company, after deducting all charges and the interest of the floating debt were, in the year 1848 ..... £72,530 17 7
And in the year 1849 ..... 67,208 5 5

Showing a diminution of £5,322 12 2

The net earnings for 1849, as here stated, are insufficient to provide for a dividend of 4 per cent., with income tax, on the present capital of 1,893,285*l.*—viz.: 1,352,800*l.*, amount of original stock; and 540,485*l.* additional stock, by conversion of so much of the floating debt; resort must, therefore, be had to a portion of the rest, if it be determined to continue on the present occasion the same rate of dividend.

The directors, rather than have recourse to this expedient, would, without hesitation, propose a reduction of dividend, if they had reason to believe that the causes of diminution of the earnings of the company in the past year were of a permanent character; but upon a careful consideration of the circumstances which have led to the falling off in the present instance, they are strongly of opinion that the causes of it have been casual, and that there exist reasonable grounds for the expectation of such an improvement during the year now entered upon, as may enable them not only to maintain the dividend of 4 per cent., but to restore to the rest a portion of the sum now required to be taken from it, supposing the same rate to be determined on. Their reasons for believing that the causes of the falling off have been casual, and that an improvement may be expected, rest on the following grounds:—

The deficiency of the earnings in the past year may be ascribed mainly to two causes.

The first of these causes, and the most important, has been the great loss of connection which these docks have sustained by the commercial disasters of 1847 and 1848. The mercantile failures of that calamitous period fell in a much larger proportion on firms connected with these docks than on those connected with the other similar establishments in the port of London.

The other of the two causes has been the occurrence of a sudden and very extensive demand, during the first six months of the last year, both for home consumption and exportation, of the description of merchandise usually deposited in these docks. The deliveries out of warehouse, from these causes, were unaccompanied by corresponding increase of importations. Hence there was a great and rapid diminution of the quantity of goods in warehouse—the stock of which having been, on the 1st January, 1849, about 70,000 tons, was reduced, by the 30th of June last, to 57,000 tons. The effect of this reduction of the stock in warehouse was seriously felt in the item of rent, which forms an important ingredient in the amount of earnings.

As far as relates to the former of these two principal causes of the deficiency—viz.: the disproportionate loss of connection experienced by this company from the commercial failures in 1847 and 1848, there is fair ground for expecting that in the redistribution among other houses of the business of the firms that have failed, this establishment will recover the proportion which it previously enjoyed, inasmuch as it presents the same advantages of situation and accommodation as heretofore. And the directors have the satisfaction of being enabled to add that they have already secured a valuable accession of new connections.

With regard to the other of the two main causes referred to—viz.: the great reduction of the stock in warehouse from the large deliveries without corresponding importations, it should seem that these were the consequences of the very low prices which prevailed in the early part of 1849, inasmuch as the recent improvement in prices of the description of merchandise resorting to these docks has been attended with increased landings and diminished deliveries.

Indeed, whatever may be thought of the sufficiency of the causes here assigned for the unfavourable state of the business of these docks, when viewed in reference to the whole of the year 1849, it must be satisfactory to observe that the operation of these causes appears to have produced its utmost effect in the first six months of that year, and that since the 1st of July last a decided improvement has manifested itself in the aspect of the affairs of the company, as will be seen by the following particulars:—

The landings in the docks were, in the six months ending 30th June, 1849, 48,247 tons; in the six months ending 31st December, 1849, 67,054 tons—showing an increase during the latter period of about 40 per cent.; and the stock in warehouse, which on the 30th of June, had been 57,030 tons, had risen by the 31st December, to 63,452 tons, exhibiting an augmentation of upwards of 6000 tons, equal to about 11 per cent., and this latter quantity has been further increased since the 1st of this month by about 1300 tons.

The accounts now on the table are made out, according to custom, for the whole of the past year, without a division into half-yearly periods; but it may be satisfactory to the proprietors to be informed that in point of fact the earnings for the last six months somewhat exceed 2 per cent., which will be seen from the following statement:—

Net earnings during first half-year, 1*l.* 11*s.* 4*d.* per cent.; ditto last half-year, 2*l.* 0*s.* 5*d.* per cent.; and it may here be further observed that the net earnings for the three years, 1847, 1848, and 1849, average 4*l.* 2*s.* 7*d.* per cent.

Upon a careful view of the considerations stated, the directors feel themselves justified in recommending to the proprietors to declare a dividend of 2 per cent. for the half-year ending the 31st of December last, the property-tax to be defrayed by the company.

If the recommendation for continuing the present rate of dividend be adopted, and the sum to make it up be consequently taken from the rest, it will have the effect of reducing the amount thereof from 56,289*l.* 1*s.* 1*d.*, at which it now stands, to 48,383*l.* 17*s.*; but it is to be borne in mind, that the sum of 5205*l.* had been added to the rest in 1847 and 1848, so that the abstraction of the amount now proposed would make the rest less by only 2500*l.* than it had been on the 1st January, 1847.

Since the last meeting of proprietors the works and buildings at the Irongate wharfs, which were in the course of erection on the site of the wharfs and warehouses which were destroyed by fire in December, 1846, have been completed, and a lease of them granted to the London, Leith, Edinburgh, and Glasgow Shipping Company.

A lease has also been granted of this company's steam-packet wharf at St. Katherine's (which has heretofore been worked by the company) to the General Steam Navigation Company. The rent in both cases commenced at Midsummer last.

The freehold interest in the whole of the above-mentioned water-side property, situated between the Tower and Lower St. Katharine's, Thames-street, is retained by the Dock Company.

The arrangements referred to are very advantageous to the Dock Company, as an improved and certain net income has thereby been secured.

The freehold premises, consisting of warehouses situated in Haydon-square, belonging to this company, have from various causes, notwithstanding the unremitting endeavours of the directors to dispose of them, remained unoccupied and unproductive for a considerable time. The directors have at length, however, succeeded in bringing a negotiation, with a company of carriers connected with the railways, for the occupation of those premises on eligible terms, nearly to a conclusion, subject to the authority which the directors now seek from the proprietors; and the notice in the *Gazette* convening the present meeting has announced the intention of the directors to apply for such authority accordingly.

A resolution was then proposed, and passed unanimously, declaring the dividend, as had been recommended, payable on Saturday, the 26th inst., and following days, Sundays and holidays excepted, and authorising the letting, or sale, of the Haydon-square property of the Dock Company; as also a resolution, in highly complimentary terms, of thanks to the chairs, and the rest of the directors, for their zealous and constant attention to the interests of the company, which was proposed by the Right Hon. the LORD MAYOR, and seconded by Mr. DE VITRE, when the meeting adjourned.

The following is a copy of the interesting abstract of shipping and merchandise exhibited at the meeting:—

PORT OF LONDON.

Ships and Registered Tonnage Entered with Cargoes during 1848 *and* 1849:—

	1848. Ships.	1848. Tons.	1849. Ships.	1849. Tons.
British	6477	1,384,655	6917	1,444,311
Foreign	3052	429,415	3040	443,923
Total	9529	1,814,070	9957	1,888,234

Increase in 1849—428 ships, and 74,164 tons register.

ST. KATHARINE DOCKS.

SHIPPING.

	1848. Ships.	1848. Tons.	1849. Ships.	1849. Tons.
Ships entered with cargoes	649	155,082	675	153,952
Ships entered to load outwards	223	33,947	253	41,837
Total	872	189,029	928	195,789

Increase in 1849, 56 ships—6760 registered tons.

MERCHANDISE.

	1848.	1849.	Less.
Landed ..... Tons	122,538	115,301	7257
Stock in warehouse on the 30th Dec.	70,152	63,452	6700

STEAM FLOUR MILLS.

The importance of the application of steam to machinery generally but more particularly to that of mill power, has, perhaps, never been more strongly developed than in the case to which we have on the present occasion to direct the attention of our scientific readers, as well as the mercantile interests. The construction of machinery in this country, with the view to its erection in Smyrna, for the purpose of grinding corn, and thus rendering that district independant of flour imported from other states, is one so important as to have excited very general attention, and from which we have elicited the following information:—

A company having been formed for the erection of steam flour mills in Smyrna, has been guaranteed, by an exclusive privilege under an Imperial Firman by his Highness the Sultan, who is moreover a very extensive shareholder in the undertaking. The capital has been fixed at 22,750*l.*, divided into 1000 shares of 22*l.* 15s. each, of which 12,750*l.* will be required for the purchase of land, erection of buildings, cost of machinery, and other requisites for immediately prosecuting the operations of the company, the remaining 10,000*l.* being as working capital.

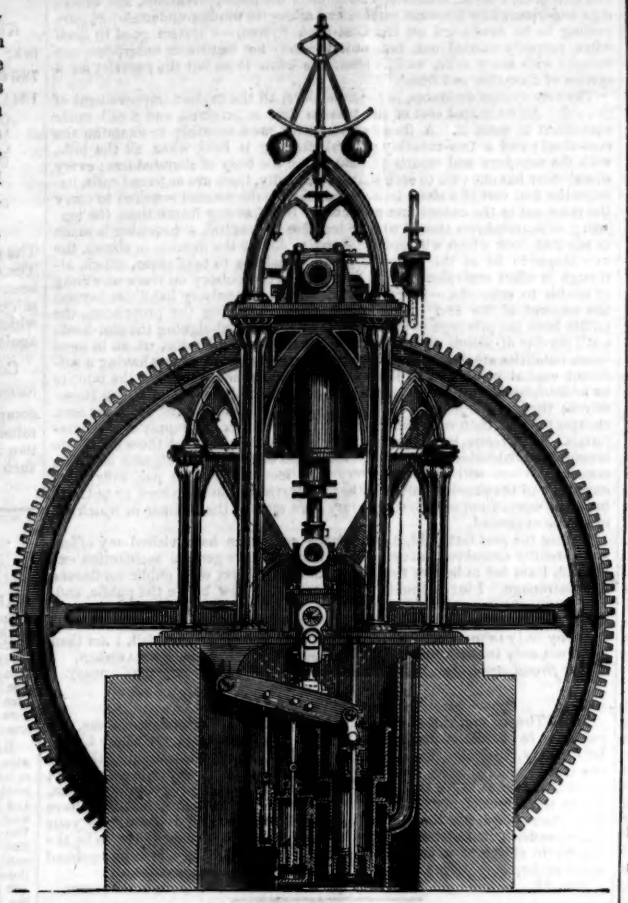
To effect the object in view, two double-cylinder engines, with boilers, gearing, &c., have been constructed by Messrs. William Joyce and Co., of the Greenwich Iron-works, the cost of which is estimated at 6000*l.*; while that of land, buildings, freighting, and other incidental expenses, may be assumed at 6750*l.*— thus leaving, as before stated, 10,000*l.* as a floating capital.

The calculation of the annual expenditure and returns may be thus given. Cost of 360,000 bushels of wheat, being the quantity consumed or ground in 300 days, 58,909*l.*; added to which must be taken the estimated annual charges, including commissions, &c., 6227*l.*, making together 65,136*l.*; while the returns for such period, at a reduced rate from that now charged, and making every allowance, would yield, after allowing all charges (including reserved fund), a net revenue of 6,736*l.* per annum, or 30 per cent. on the capital employed: 14 pair of stones, with the attendant machinery, have been prepared, and are now in course of shipment, 12 pair of which will be kept constantly at work, which are calculated to yield the returns previously stated. It would appear that in Smyrna the flour-mills employed are worked by horse and wind power, which is found totally inadequate to meet the demand even for local consumption; the natural consequence being that of the importation of flour to a considerable extent—not only from the adjacent islands, but large supplies are obtained from the interior of Asiia Minor, thus rendering the article excessive in its cost, and thereby limited in the demand arising therefrom. To counteract the effects of which, the present company has been formed, the Turkish Government having granted its especial patronage, with an exclusive privilege for 15 years, and the right of supplying the troops and navy of the Sultan for such period. The expense of grinding by steam, it would appear, is less than one-half the present cost; while by its application, six times the quantity can be obtained within a given time than under circumstances where horse-power is employed. The advantages derived by the company in possessing capital afford them the opportunity of furnishing the article at a reduced rate, and, at the same time, yielding large profits to the shareholders.

Having thus minutely entered into the objects of the company, we at once proceed to refer to the accompanying diagram, and to afford such information as we collated on a visit to the works on the 19th inst., when several eminent engineers and gentlemen connected with science and mercantile pursuits were present, with the view of inspecting the nature of the machinery, and the results to be derived by the application of other engines of a like nature.

The conclusion at which we arrived from such inspection was of a highly satisfactory nature; and we cannot but congratulate Messrs. W. Joyce and Co. on the perfection to which they have brought their machinery generally, as well as that under our immediate notice. It is sufficient to observe, that the mills are driven by the same horizontal shaft; and the apparatus necessary for dressing the flour is so compactly combined with the stones, that one man, it is thought, will be able to attend with the greatest ease to all the 14 pairs in full work. As the district in which Smyrna is situated is by no means abundant in water, the mill is erected by the sea coast; and as they intend making their steam from salt water, the company have had the air and other pumps lined with bell-metal, to prevent the corrosive action of the brine. The two engines are constructed for 25-horse power each, but may be wrought together at 90 with ease, and that at an expense of fuel not exceeding 3 lbs. of coal, or about ½d. per horse-power per hour. The patent of the Messrs. Joyce, we may observe, presents to the eye at first sight simplicity of contrivance and great beauty of form—not at all disappointing upon a closer examination, whether of the strength or effective character of the works, or of the sound principles on which they have been designed.

The engines which the Messrs. Joyce have constructed for this purpose, have been formed upon a principle entirely new in this country, which has been found to work with unexampled advantage in several establishments in which the same kind of engines has been adopted. In their general arrangement, they may be described as belonging to the class of steam-engines termed "oscillating," from the circumstance of their cylinders vibrating on axes or trunnions, in order that the piston-rods may constantly act upon the cranks without the intervention of what in stationary engines is termed a parallel motion—a contrivance, by which the vertical



motion of the piston-rod is adapted to the circular motion of the cranks. The principle discovered by Woolf, of introducing steam of a high-pressure into a small cylinder, and allowing it to act expansively in a larger one at a pressure smaller than the original, in the proportion of the circular sections of the cylinders, and afterwards to add to its effective force by condensation, is here applied in an extremely ingenious manner, and with a simplicity of arrangement having reference to the multiplicity of objects which are to be provided for simultaneously in the machine. But what Woolf did by the intervention of parts which rendered the action indirect, is here done without the aid of subsidiary arrangements, and the action is direct. The oscillating cylinders are for this purpose inverted, and vibrate upon steam-ways at their upper extremities. The long horizontal shaft upon which the piston-rods act is furnished with cranks, so that the dead point is always got over, and the motion transmitted by cogged-wheel gearing, the large wheel being 16 feet in diameter—the 14 mills, each of which is furnished with a pair of millstones, grinding in the usual way.

A report from Mr. Elijah Galloway, C.E., who was employed by Mr. T. Comer to examine the machinery for him, is now before us, from which we gather, that the capacity and dimensions of the engines and machinery are, in all respects, more than ample both for power and strength—the engines, moreover, being equal to nearly double the power required. With reference to the four boilers employed to generate the requisite quantity of steam, Mr. Galloway expresses his conviction that *one* alone will be nearly capable of supplying both engines, thus affording the command of full three times the power required, and which would, in his opinion, work safely at "double the proposed maximum pressure." The report concludes with expressing the great satisfaction on his part of the economy attendant on the application of the machinery, and the nicety and perfection with which it has been constructed.

In the course of conversation we were given to understand that an engine of 12-horse power, at the Greenwich Iron Works, upon the principle referred to, costs only 30s. per week for 12 hours per day, while several establishments at home and abroad prove the consumption of fuel to be less than 3 lbs. per horse power per hour.

Having thus entered fully into the subject of the machinery, we have only to refer to the accompanying diagram, which will be found sufficiently explanatory to enable our readers to follow the description above given. The works of Messrs. Joyce we consider perfect, as a whole, while the present instance affords a just exemplification of the capabilities of the firm to execute works of this elaborate nature.

STRUVE'S PATENT MINE VENTILATOR.

COST—£150.

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Quantity of air passed through a Mine almost unlimited, to the extent of 200,000 cubic feet per minute, if necessary—depending on size of apparatus.

COST of an APPARATUS to produce a ventilation of 20,000 cubic feet per minute, ONE HUNDRED and FIFTY POUNDS, exclusive of patent right. This amount of ventilation would be sufficient for a mine working 150 tons per day, provided it was not very fiery; in which case it would be desirable to provide for 30,000 cubic feet of air per minute. The capabilities of the Ventilator may be doubled at any future time, at a comparatively small cost.

The Ventilator has been at work for upwards of nine months at the Eaglesbush Colliery, near Neath, working under a rarefaction of 2½ to 3 inches of water, which demonstrates the impracticability of furnace ventilation, when the shafts are shallow and the airways small.—It is practical to rarify a mine by this ventilator to the extent of 2 feet of water, or 2 inches of mercury.

LICENSES will be GRANTED on application to

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IMPROVED RATCHET JACK. HALEY'S PATENT LIFTING JACK.

MANUFACTURED BY

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*** The attention of parties who employ

Lifting Jacks,

is respectfully requested to the superiority of those annexed, over those hitherto in use.

BY HER MAJESTY'S ROYAL LETTERS PATENT.

DUNN'S IMPROVED MODE OF REMOVING RAILWAY CARRIAGES FROM ONE LINE TO ANOTHER.

The ADVANTAGES of the PATENT TRAVERSERS over those in ordinary use are, that there is no expensive gear attached, and they are not liable to get out of order; they are easily cleaned and oiled; the foundations are formed upon the simplest sleepers; the cross tram-rails are upon a level with the permanent rails, leaving no break or recess whatever, and the roads are as firm and steady as the general line. The whole of the gear is simple, strong, and inexpensive, compared with others, and leaving considerable more room in a station than turntables, and at a saving of from 200 to 300 per cent. over the same. One of these Trucks is now working 10 lines of rails at the Peterborough Station of the Eastern Counties Railway; another at the Salford Station, Manchester; and one is working 9 lines of rails on the Paris and Lyons Railway. It has also been introduced at many smaller stations throughout the country, for goods warehouses, stone quarries, collieries, contracters, &c.; and the engineer and directors of the Lancashire and Yorkshire Railway Company decided to work the chief stations at Liverpool and Bradford by two Traversers in each, working four lines of road per Traverser, in preference to all other plans submitted.

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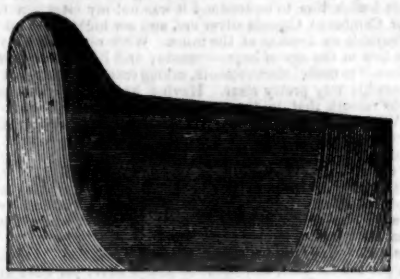
The experiments made by the Royal Artillery on the embrasures of Plymouth Citadel, constructed of Seyssel Asphalte Brickwork, under the orders of the Hon. Board of Ordnance, have fully proved the superiority, adhesiveness, and strength of Seyssel Asphalte over all other cementitious compositions. A printed account of these experiments can be had on application to I. FARRELL, Secretary,

Seyssel Asphalte Company—"Claridge's Patent"—Established 1838.

Note.—The application of the Asphalte of Seyssel is specially recommended by the Commissioners on the Fine Arts for covering the ground line of brickwork in marshy situations, and it has been suggested that it would be peculiarly applicable for covering the *areas* of closed *grave yards*, and for the construction of *catacombs*.

THORNEYCROFT'S PATENT RAILWAY AXLES, RAILS, AND TYRES.

RAILWAY TYRE.—SECTION No. 1, HALF SIZE.

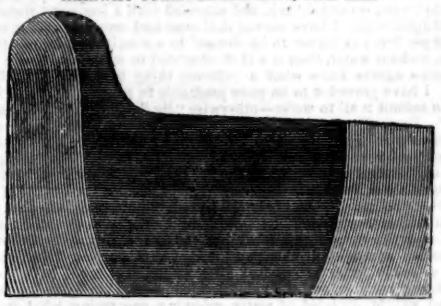


The middle, or wearing, part of this tyre is composed of chrystaline charcoal iron, the hardest and soundest iron made. The outward edges are made from a mixture of India charcoal pig with the toughest fibrous iron—the whole made upon an improved principle into one homogenous mass.

These charcoal tyres are warranted better and more durable than any tyres made in England.

Price—£15 per ton net at the works, up to 3½ cwts. each.

RAILWAY TYRE.—SECTION No. 2, HALF SIZE.



The middle, or wearing, part of this tyre is composed of the best refined chrystaline puddled iron.

The outward edges are of the best No. 3 fibrous iron, and put together upon an improved principle into one homogenous mass.

These tyres are warranted quite equal to any made in Staffordshire.

Price—£10 10s. per ton net at the works, up to 3½ cwts. each.

BEST STAFFORDSHIRE TYRES—£8 10s. per ton at the works, up to 3 cwts. each.

Fig. 1.

SECTION OF BRIGG'S PATENT COMPOUND AXLE.

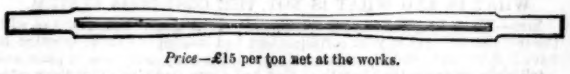
Scale ½ inch to a foot: parallel axle.

Price—£14 per ton net at the works.

Fig. 2.

SECTION OF BRIGG'S PATENT COMPOUND AXLE,

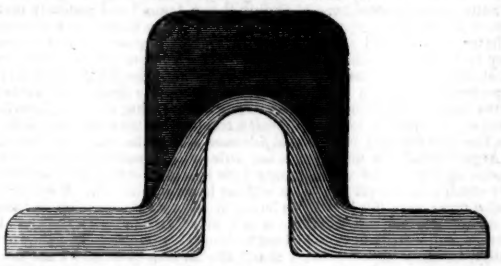
Showing the extent to which the internal bar is welded solid at each end, drawn down in the middle half an inch.



Price—£15 per ton net at the works.

PATENT ANTILAMINATING CHARCOAL RAIL.—SECTION No. 1, HALF SIZE.

Price—£10 per ton net at the works.

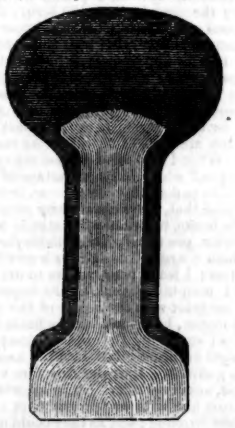


Patent Antilaminating Rails, made from the same quality as the best S & B iron. *Price*—£7 10s. per ton net at the works.

The upper, or wearing, part of these two sections of rails is made from antilaminating charcoal iron, much harder than any other iron, perfectly free from lamina. The under, or fibrous, part from best No. 3 puddled iron.

PATENT ANTILAMINATING CHARCOAL RAIL.—SECTION No. 2, HALF SIZE.

Price—£10 per ton net at the works.



Patent Antilaminating Rails, made from the same quality as the best S & B iron. *Price*—£7 10s. per ton net at the works.

Rails of the same sections are made from puddled iron, quite free from lamina in the wearing part, but soft and less durable than charcoal rails.

This principle is applicable to any kind of rails.

I beg to inform the railway public, that the machinery for testing the strength of axles, and the strength and soundness of the tyres, is now ready; and I offer it to the public without any charge for its use, to try any one's make of axles and tyres they may think proper. A machine has been designed, and is now making by Messrs. Fox, Henderson, and Co., for proving the quality and durability of tyres and rails by actual wear and tear, the same as when at work on a railway, at any speed you like. The name of the designer is, I trust, a sufficient guarantee for its efficiency; in fact, it will be so true a test, that it must prove satisfactory to the most fastidious mind; and, so soon as it is completed, it shall be offered to the public, on the same terms as the testing machine above-mentioned.

Shrubbery Iron-Works, Wolverhampton. G. B. THORNEYCROFT.

Original Correspondence.

ON THE TREATMENT OF RICH SILVER ORE.

SIR,—In answer to Mr. F. Daniell, respecting rich silver ore, I would first remark, that I wish him to understand it was not my intention to depreciate the value of Camborne Consols silver ore, and am highly pleased to hear him give so favourable an account of the mine. With regard to his experiments, I admit we live in the age of improvements; and I give every man credit for exerting himself to make improvements, taking care not to carry it to extremes before he sees his way pretty clear. Having had a little experience in silver ore, I beg to remark that, in the first working of Wheal Duchy, Wheal Brothers, and Wheal St. Vincent Mines, where nearly every kind of silver ore was found, a deal of trouble was taken in dressing it, and they were at a great expense to reduce the quantity to enhance the value, and save returning charges. What was the result?—Why, after 10 or 12 years' working, it was then discovered that nearly all the "refuse" was saleable, and would leave a handsome profit. This refuse was then sold, and nearly all carried off in its rough state; the rivers were also scraped, for some distance below, wherever any deposit could be found.

I have sold thousands of tons of lead ore from Treburgett, producing from 11 to 12 cwts. per ton for lead, and about 50 ozs. of silver per ton; and then sold hundreds of tons of refuse at remunerating prices. I have shipped from Pengenna nearly all the refuse left on the mine by the ancients, without dressing; also the refuse from Port Quin, and what now remains will pay for shipping;—I could mention many other places if required. I think this will show sufficiently clear to any practical man, that all money paid for dressing in these mines, to extract these refuse substances, was totally lost, as the returning charges had to be paid on each lot—the rich and the poor. Most men accustomed to silver ore are aware that the specific gravity of nearly all descriptions, and the foreign substances they contain, is less than that of lead; these foreign substances often contain the largest portion of silver, and, if submitted to water, is carried back, and attended with a loss, notwithstanding the refuse is again sold. I have proved that most lead ores, containing, say, 50 ozs. of silver per ton, pay better to be dressed to a standard of from 9 to 10 cwts. per ton, without water, than it will if submitted to water, and made worth 12. Most mine agents know what a reducing thing best dradge is, when put to water. I have proved it to be more profitable to select one-half of it for crop ore than submit it all to water—otherwise "jig" it in what is termed a "still hutch." From Mr. Daniell's statement, he does not intend to submit his ore to water after calcining, in which I think him quite right; but I really cannot see how any favourable result can arise from Mr. Daniell's calcining his silver ore, as that process reduces nothing more than the sulphur evaporated. I admit I have never tried the experiment; but, from what I know of calcining, I should say, it must be foul ore. If he reduced above 1-20th part (I will set it down at that), supposing he sends his ore to Wales, or even to London, there will be only the freight and returning charges of 1 ton in 20 saved; then the question comes—will this pay the cost of a burning-house, and the expenses of calcining 20 tons of ore? The experiment could have been tried in the common crucible, and the point decided in one hour by taking two samples of equal weight, divested of water, calcining one, seeing what it reduced in weight, and then assaying them as to produce. Is Mr. Daniell quite sure that no light silver ore is carried off in calcining in a common tin burning-house? I am not satisfied on that point from what I have witnessed. The best plan I have yet seen adopted for silver ore, of the description Mr. Daniell describes, is to carefully divide it into three classes; the first, ship in barrels; the second, in bulk; and the third, reduce in quantity until saleable, avoiding running water as much as possible. But I am inclined to fall in with the age we live in, and am aware there is room for improvement. The ore I mentioned in my last was what is commonly called steel-grained lead, mixed with a heavy dark capel, sulphur, copper, blende, and grey silver ore; to bring the lead ore worth 10 cwts. per ton, nearly all the sulphur, copper, blend, and silver ore was taken out, leaving little more than lead and capel, and these substances extracted contained by far the greatest portions of silver. N. ENNOR.

Treborough, Jan. 22.

P.S.—I have no thought of going to London for the present, but shall shortly visit the west of Cornwall; and, if time permit, I will call and see some of Mr. Daniell's specimens of silver ore on the mine, as I am quite at a loss to know, from mine reports, what silver ore is, as it now appears to have become the fashion of the day to call all lead ore which contains 30 or 40 ozs. of silver per ton, silver ore—the name sounds high.—N. E.

WHAT IS, AND WHAT IS NOT, THE COST-BOOK SYSTEM.

SIR,—When I replied to your correspondent, "Argus's," letter, I did so with the full conviction that your correspondent had mooted the above question to have it fairly and candidly canvassed; and I think my letter put in plain and intelligible language the alterations that had been made, and that those alterations did not impair the *principle* of the cost-book, but was a great improvement on the old system; and I candidly confess that I took up your Paper of last Saturday with some hope of finding that "Argus" had manfully met the question at issue; but, apart from a ponderous levity which runs throughout the letter, and which, I presume, your correspondent gives in lieu of a rejoinder to my reply, I find nothing in his letter but an admission that he is ignorant of that which would alone entitle him to have made the challenge he did; and the perfect facility with which he seems to be used to draw up a bubble prospectus has led him into the grievous error of supposing that the *formation* of a company consists in issuing a prospectus. In bubble companies, it is, perhaps, the chief feature; but, in *bonâ fide* ones, it is of the least importance.

"Argus" admits he understands but little of legal matters, and will not discuss the legality of the contract note (the improvement adopted, by which a party obtains an interest in a mine without becoming liable). *Why, the whole question turns upon this!*—and his letter, in mooting the question, is based on the assumption that this alteration is not in accordance with the Cost-Book System; and, when I have explained to him the alterations, and shown their legality, he coolly says—"Oh! I shan't discuss that question; I am not possessed of the knowledge to enable me to do it." Then, I would ask, why has he ventured to enter the lists upon the question? But "Argus," as usual with those who cannot answer an argument, shifts his ground, and thinks to get rid of the question by arguing on an assumption raised by himself. He says, first, that, in the company he describes, the contract note-holders would be liable. Now, this is a legal question, and "Argus" admits he is ignorant of law, and, *a fortiori*, incompetent to argue the question. However, he ventures to do so; and the following two reasons are the only ones I can find in his letter for his coming to the conclusion he does:—

He says, under the old scrip system, a person holding scrip was liable for debts contracted during the time he held the scrip; therefore, contract note-holders are liable. Does not "Argus" really know the difference between scrip certificates and contract notes? but he is ignorant of the law, and, therefore, his confounding two distinct things is pardonable. The scrip he talks about relates to companies formed under the Joint-Stock Registration Act, which Act, as "Argus" himself admits, *exempts from its operation companies formed upon the principle of the Cost-book System.* Away goes one leg upon which he stood: now for the other. He says, the fact of certificate holders attempting to examine the accounts of the directors renders them liable for the debts of the concern. When I read this I rubbed my eyes once—twice—thinking that, perhaps, "Argus," who has the advantage of being considered at least *wide awake*, had been able to discern more than an ordinary mortal; and so he has, for he has discovered that, if by chance any person owes you money, and you go and look at his books, to see how he stands with his creditors, with a view of seeing his position, *you thereby become liable for his debts.* These are the two grounds upon which "Argus" cooly says a certificate holder is liable for the debts of the directors; I leave your readers to draw their own conclusions.

The next thing is, I maintained that, by the improvement introduced, the directors enter into a contract with the holder of the note, by which the holder obtains an equitable interest, but is not legally liable for the debts of the mine. "Argus's" reply is this: supposing the original directors to be everything they ought, the concern *might* eventually fall into the hands of others not so scrupulous, and who is to guarantee that the directors will properly expend the funds? this is, I confess, unanswerable. But what would "Argus" think if any person refused to entrust him with any property, or credit, on the ground that he might be all that was required; but as they could not answer for the persons who might succeed him, they must decline transacting business with him? If this absurd principle was to be entertained, all our bankers and merchants would have to shut up their place of business, and "Argus" would be left alone in his glory. You will perceive, Sir, that "Argus" has not attempted a reply to my letter; he has left it unanswered. He, however, says, at some future time, he intends to return to the subject; possibly he intends that reply to be like a lady's letter, which contains the most material part in the postscript. I again invite "Argus" to answer that which I have maintained in my letter in your last publication but one, for I do not think your readers will be satisfied that "Argus" has advanced one word in reply, although he very modestly says he thinks your readers will be satisfied. If they are, especially after reading the *conclusive arguments* "Argus" uses, all I can say is, your readers are very partial to *light* reading.—A SHAREHOLDER: *Jan.* 24.

THE WEST POLGOOTH COST-BOOK.

SIR,—As the above is daily becoming a matter of public discussion among the mining circles, allow me the privilege of making a reply to two articles in the Journal, written by "Argus," in doing which I shall refrain from using any of that ridiculous satirical bombast which he is so very proficient in, and confine myself to a sober common-sense description of my views, which, in my humble opinion, is far better, and much more likely to elicit the truth. Although the first projector, of the improved system, for conducting mining companies, the legal details of the scheme have been matured under the guidance of gentlemen of great experience in the profession, and on whose judgment I have not yet found any one inclined to differ. I have been led to introduce this new plan, from an intimate knowledge of the losses, privations, and sufferings experienced by innocent persons embarking in mining undertakings purporting to be conducted on the Cost-book System—a system good in itself when properly carried out, but, unfortunately for legitimate enterprise, one fraught with many evils, as it is found too often to be but the coverlet for a system of deception and fraud.

The new system embraces, in the first place, all the modern improvement of the old. An estimated cost of the mine is first ascertained, and a call made equivalent to meet it. A finance committee meet monthly to examine the cost-sheet; and a two-monthly general meeting is held, when all the bills, with the vouchers and reports are laid before the body of shareholders; every shareholder has one vote to each share.—Secondly, there are no forced calls, because the first cost of a share is more than double the amount required to carry the mine out to the extent first projected. But if, at any future time, the majority of shareholders should wish to increase the capital, a provision is made in the cost-book which will enable them to double the number of shares, the new shares to be at the option of the shareholders to take them, which, although in effect equivalent to a call, is yet not compulsory on those unwilling or unable to subscribe.—Thirdly, there are no compulsory liabilities beyond the amount of the first cost of the share, as, excepting the proprietors, the public have the privilege of being shareholders, without signing the cost-book, until regular dividends are made from the profits of the mine, when, in most cases, liabilities are supposed to cease.—Fourthly, the proprietors having a sufficient capital subscribed at the onset, are enabled never to allow the mine to be in debt, because, if they were to do so, the liabilities would fall on themselves; they are, moreover, able to get their works prosecuted at 25 per cent. cheaper for cash than mines which depend on credit for the supply of their materials. I, therefore, boldly assert, there will be no calls; and there can be no involuntary liabilities—as far as the managers of the West Polgooth Mine are concerned, there will be none; every debt incurred will be paid every two months, and the shareholders, whether registered on the cost-book or not, will have the consolation of knowing every two months the manner in which his money is expended.

During the past fortnight, a great many gentlemen have visited my office, and carefully examined the cost-book; and, from the general satisfaction expressed, I am led to believe that the system will meet with public confidence and patronage. I invite inquiry. Our scheme is now before the public, and, like every other new thing designed for a general good, has its supporters and opponents. I only ask 12 months to test its merits; if I succeed, I shall have done my duty to my liberal employers, and no more; should I fail, I am then open, not only to their, but to public censure. C. S. RICHARDSON,

Old Broad-street, Jan. 24. Engineer to the Company.

PAR CONSOLS MINING COMPANY.

SIR,—The amount stated as having been paid up on shares in this mine, and published in the list of dividends for 1849, was taken from the Share List of 1st January, 1848, and it also occurs in the list of dividends paid in 1847. No one can be more anxious than myself to be correct in these mining statistics; no one, I am sure, more than myself, knows the difficulty in obtaining them. I give the source of my information in the present instance, because I have more than once applied to the fountain head in vain, and I agree with your correspondent, that advancing the value of mining property ought to be the legitimate object of your Journal; and, I may add, this would be rendered much easier, were agents in general more ready to give information

Jan. 23. J. Y. WATSON.

THE COURT GRANGE MINING COMPANY.

LORD MAYOR'S COURT—JAN. 19.

JOHNSON *v.* THE DIRECTORS OF THE COURT GRANGE MINING COMPANY, GARNISHEES—OLIVER, DEFENDANT.—Mr. Randall and Mr. Locke appeared for the plaintiff, and Mr. Ryland and Mr. Laurie for the garnishees. This was a customary attachment in an action of debt for 600*l.*, sworn at 300*l.*, to recover from the garnishees certain moneys to which the defendant, Mr. Philip Oliver, was entitled from them, upon and subject to certain conditions and contingencies contained in an agreement, by which Mr. Oliver assigned to the company a lease of a lead mine in Cardiganshire To show what payment had been made to Mr. Oliver, and how the account stood between him and the company, it was necessary that the agreement should be put in evidence, and the secretary of the company was called upon to produce it, and all books containing entries relative to the defendant.

Mr. RYLAND objected to the agreement being received, on the ground that it was not stamped.—The RECORDER having examined the document, which formed portion of a book, said that it was framed precisely as a deed of conveyance might be, but it was neither executed as a deed, nor was it stamped as an agreement.

Mr. VON USTER (the secretary) said, he should exceedingly regret that this document should be considered not a valid instrument. It was written in what was called the "cost-book;" and, in mining districts, if such agreements related to mining matters, they were considered quite as valid and as binding as a regularly executed deed. He was not prepared with precedents; but, in the Stannaries' Courts, in Cornwall, such agreements were continually acted upon as valid documents; and one of the directors, a solicitor, advised his colleagues that such a proceeding would be binding in law upon all parties; beside, the agreement had been acted upon, and the company were now in possession of, and working, the mine, and sums of money, in respect of the transfer, had been paid to Mr. Oliver.

The RECORDER then said, that no doubt the conditions of the agreement could be enforced in a court of equity; but he could not receive it, except evidence were given to show that, by Act of Parliament, or local custom, it could be received.

Mr. LOCKE said, his client was not aware that such a point would be raised, or he would have brought evidence to meet it.

The RECORDER wished that the attorneys of the court would exercise a little more care in having the cases perfected before they came into court, and would go to the additional expense of consulting counsel as to the sufficiency of evidence. Much valuable public time would be saved, and very often verdicts would be differently given. He was sorry to say that he was ever complaining of the laxity of evidence in that court, and he wished to impress upon them that, unless they took a little more pains with their cases, he could not resist the public demand for the court to be thrown open to the profession. Attorneys took the best evidence they could to other courts, and he could not see why the worst evidence was considered good enough for that court.

Mr. LOCKE then proceeded to examine the witness at great length, with the view of showing the state of the accounts, without reference to the agreement, but the witness could not tell what balance was due by the company to Mr. Oliver, unless the agreement was admitted in evidence.

Mr. RYLAND called upon the court to interfere, and not to suffer such a mode of proceeding as that adopted by his learned friend; which no other court would tolerate.

The RECORDER said, the course Mr. Locke is pursuing is like giving the length and breadth of a ship, and the height of the mainmast, and inquiring the name of the captain. He has had only two hours' amusement, and that is very reasonable, considering what kind of brief he had.—Mr. LOCKE then said he could not carry the case any farther.

The RECORDER told the jury the plaintiff had not made out his case, and directed them to find a verdict for the garnishees.—Verdict accordingly.

[Shortly after the RECORDER said, since the close of the case he had heard that the plaintiff himself had prepared his own brief. It was, therefore, due to the four gentlemen who practised in that court to state this, because, during the trial, he had made use of expressions towards them which might be taken in a harsh interpretation. He certainly felt called upon at the time to comment on the manner in which the case was got up, but his only object in doing so was to make the court a useful one to the citizens of London, and it was most important that the business should be so conducted that the public should be satisfied as to its utility.]

IMPORTANT MINING QUESTION,—At the Bail Court, on Monday, in the cause Tucker *v.* Fox and others, Mr. Cockburn moved for a rule to change the venue from Cornwall to Somersetshire or Devonshire. The plaintiff, who was a landowner in Cornwall, brought his action against the defendants, who were the owners of certain copper mines in the same district, for fouling the water which ran through his property, and irrigated his land, thereby causing great damage and serious injury to the land. The defendants pleaded a custom throughout the whole county of Cornwall, by which it was said that the workers of all metallic mines had a right to pump the water out of them, and to let such water go into any adjoining stream. The question here involved was one of the greatest importance to all parties possessed of landed property in the county of Cornwall. On the other hand, it was said that this custom was only recognised in respect to tin mines, the washings of which were perfectly harmless. Not so as regarded copper mines, the water from which so polluted the streams or rivers into which it was pumped, as to cause the greatest damage to the land, wherever it overflowed it, by destroying all the vegetable properties of the soil. In the present case the plaintiff complained of about 80 or 100 acres of his meadow land being entirely destroyed. The action had been once brought to trial in Bodmin, but that trial miscarried, in consequence of the disagreement of the jury, who had been locked up, but were subsequently discharged by consent. The affidavit stated that it was almost impossible to obtain an impartial jury in Cornwall, where there were so many persons interested in mining transactions. The judge in summing up, commented in strong terms upon the extraordinary nature of this alleged custom; and it was stated by the under-sheriff, that almost every person in the county was, more or less, connected with the mines, so that it was utterly hopeless to obtain a fair jury out of such a population.—Application granted.

WHEAL RUBY.—The Vice-Chancellor's Court was occupied the greater part of Monday and Tuesday with the case of Geach *v.* Pedlar. The dispute between the parties was whether a transaction between them concerning the mine amounted to a sale or a mortgage only. The facts are wholly uninteresting, and the evidence depended on conversations and the real meaning of a correspondence. The plaintiff alleged himself to be mortgagor, while the defendant asserted that he (the plaintiff) was vendor. His Honour made a decree for the plaintiff.

EMIGRATION TO CALIFORNIA.—The bark, *John Calvin*, sailed from Plymouth for San Francisco, California, on the 23d inst. She is crammed full with an assorted cargo of general merchandise and British manufactured goods, including several iron houses, canvass tents, &c. About 104 passengers go out in her, 40 of whom embarked in the Thames, and the remainder at Plymouth. They include merchants, mechanics, carpenters, blacksmiths, coopers, &c. Sir Henry Huntley, formerly Governor of Prince Edward's Island, goes out in the *John Calvin* with 20 or 30 miners, forming an expedition for the purpose of working mines in Upper California. Messrs. Fox, Sons, and Co, were agents for the *John Calvin* at Plymouth.

The Compendium of British Mining.

BY J. Y. WATSON, ESQ., F.G.S.

KIRKCUDBRIGHTSHIRE MINING COMPANY.—The mine of Cairnsmore, near Newton Stewart, in Scotland, is worked by a London company in 786 shares. The accounts, from the commencement of operations, in July, 1845, are as follows:—

Calls received, 9*l.* 3*s.* per share	£	3092	18 0
Lead ore sold, 1452 tons 6 cwts.		12394	14 8
Copper ore sold		9	12 10
Engine and materials sold		148	0 0
Total receipts	£	20,645	5 6
Costs July, 1845, to December, 1849, inclusive		20,466	9 7
Balance in favour of the mine, Jan. 15, 1850	£	179	15 11

The present returns are about 40 tons per month, which leave a small profit. The machinery consists of two water-wheels; but a steam-engine has just been purchased, which will enable the agents to increase the returns considerably. The mine is near the old Black Craig (and upon the same lode), which formerly realised large profits, and has within a few months been again set to work under favourable auspices.

COOK'S KITCHEN.—This is one of the oldest mines in Cornwall, worked formerly 200 fathoms deep, and yielding 200,000*l.* profit. The present company, in 2560 shares, 14*l.* paid, have been opening other parts of the mine with spirit, and are said to have been rewarded of late with one or two interesting discoveries. The present price of tin must materially assist such mines as this.

[*To be continued in next week's Mining Journal.*]

Mining Correspondence.

BRITISH MINES.

ALFRED CONSOLS.—The lode in Field's engine-shaft, sinking under the 60 fm. level, is still large, and will yield from 8 to 9 tons per fm.—worth from 40*l.* to 50*l.* per fm. The lode in the 60 fm. level, east of the said shaft, is from 2 to 3 ft. wide, yielding from 1 to 2 tons per fm.—worth from 6*l.* to 8*l.* Four of the men that were in the 60 fm. level east are rising against the winze sinking under the 50 fm. level; the ore course here is about 2 ft. wide, and, I think, will yield 4 tons per fm.—worth 24*l.* per fm. The lode in the 60 fm. level, west of the shaft, is about 3 ft. wide, having a promising appearance. The winze sinking under the 50 fm. level is producing copper ore of good quality—no other change since the last report. Our ore to sample on 22d inst. is computed 32 tons; this quantity was raised from the shaft and end in about three weeks.

BARRISTOWN.—The lode in the 30 fm. level end west is about 20 inches wide, and producing about 8 cwts. of lead per fm.; in the same end east the lode is not so large, but producing equally as much ore; the lode in the rise in the back of this level, also the lode in the winze sinking in the 26 fm. level over it, is about 18 in. wide, and producing about 6 cwts. of lead per fm. We have suspended the 26 fm. level end west for a short time, till the winze behind it is holed to the 30, to discharge the stuff. The stopes in the 26 fm. level are producing about 6 cwts. of lead per fm. The men at Slob shaft have been a little hindered this last week from sinking under the 30 from the cutting of the lode at that level. We hope to cut the lode in sinking this shaft, without the aid of a lift. The lode in the bottom of the adit level east is 4 ft. wide, but still poor. The ground in the cross-cut, south of Nangle's shaft, is favourable for driving, and looking better for a lode.

BEDFORD UNITED.—The lode in the 103 fm. level, east of the engine-shaft, is 12 in. wide, producing good stones of ore; in this level, west of Burley's winze, the lode is 2 ft. wide, producing little ore. We are still driving by the side of the lode in the 103, east of Burley's winze. The lode in Crew's winze, in the 90 fm. level, is without alteration, producing 3 tons of ore per fm. In Bray's winze the lode is not at present so productive as it has been, but I hope to report an improvement in my next. We are driving by the side of the lode in the 90 fm. level. We weighed, on Saturday last, November ores, 116 tons 15 cwts. dry weight.

BIRCH TOR AND VITIFER.—We have commenced working again; we got our wheels to work on Friday at 2 o'clock P.M., and the water was in fork on Monday at noon, and the men are all working in their respective places. We have begun to cut a plat in the old engine-shaft, in the 8 fm. level, and as soon as this is done we shall commence sinking the shaft under that level—I hope that this will not occupy more than a fortnight from this time (22d Jan.) The men are getting on very well with the adit level west of this shaft, and we do not thing that floods will injure us again in this part of the mine. The ground in the cross-cut, north of the mine, is favourable for driving. The water has not done any material damage to the mine. We have not worked on the lode since our last report.

CARADON UNITED.—We have finished securing our shaft, and have driven a small level near the bottom of it, which has let go a large stream of water. In this drivage we have met with a good little course of tin, near the foot wall of Morshead's lode; the leading part is about a foot wide; so far as we have seen it, it is worth about 8*l.* per fm., and the end can be driven for about 1*l.* 15*s.* per fm. I think we are nearly on the top of the tin, and hope to have a better lode in depth. On Monday next I hope to resume sinking again, and judge, in two months from this time, we shall be down to the 60, and cut the plat.

CARTHEW CONSOLS.—Upper Mine: The north end, in the 65 fm. level, has not been driven this week, the men therefrom having taken the tribute pitch in the back of it, which is yielding large quantities of rich work; this end, without very great inconvenience to the tributers, as well as the end men, cannot be recommenced for another week. The lode in the end, in this level south, looks very well, better than last reported. In the 55 fm. level north we are getting on very well in clearing, and, as far as we can see, there is a very good lode. The want of men in other parts of the mine has caused me to suspend, for the present, the 48 fm. level south. The lode in the end, in the 28 fm. level south, does not show quite so well as last week, still it is a very promising end. The tribute department may be reported as looking very well indeed. A greater facility (than that expensive and slow process of horse whims) for hauling the stuffs, would place this mine in a very improved position, as it would enable us to give higher prices to tributers for old pitches; at the same time, by the comparative trifling expense of drawing the stuff therefrom, the company would realise a much greater profit from those pitches, the number of which would be increased four-fold, and, perhaps, a great deal more.—Lower Mine: I find no alteration here of importance since my last.

DEVON AND COURTENAY CONSOLS.—The lode in the end driving west of the 40 fm. level is 3 ft. wide, but the lode is split into branches, which are mixed with killas; these branches contain lead and copper ore, which the men are saving. In our 50 fm. level driving east, on the south lode, the lode is 2½ feet wide, composed chiefly of capels and spar, and some spots of ore. The ground in the engine-shaft, sinking under the 50 fm. level, continues rather hard. The pitches continue to look well.

EAST BIRCH TOR.—I am glad to inform you that we have this day discovered some good stones of tin to the west of No. 4 lode. We have also found a good lode to the east near the footway shaft, and we have this week set our stamps to work, and I shall lose no time in dressing our tin-stuff.

EAST CROWNDALE.—In the 28 fm. level east, the lode is 3 ft. wide—good saving work throughout; in the same level west the lode is 2½ ft. wide—1 ft. in the south part good work; in the same level, east of engine-shaft, the lode is 2 ft. wide, poor. The tribute pitches, on the whole, are looking well. We have again resumed our stamping and dressing, and hope to sample on Saturday, the 26th inst.

EAST WHEAL GEORGE.—In consequence of the coming water we have been obliged to abandon the winze until we have machinery; the lode has holed down well, and looking very pretty in the bottom. We have put four men on the adit end driving east.

ESGAIR LLEE.—The north lode in the deep adit, east of the cross-cut, is much the same as last reported; the lode is 4 ft. wide, promising, and producing some good stones of ore, but not sufficient to put a value on; the end is quite dry overhead, and the ground is favourable for driving. There is no alteration in the lode in the winze under the 12 fm. level since last reported—the lode is large, but poor; the counter lode in the 12 fathom level, east from the surface, is improved since my last report, and will yield, on an average, about 6 cwts. of ore per fm.; the caunter in the deep adit east, from the base of the hill, is 6 ft. wide, looking kindly, and producing some good work. We have suspended sinking the engine-shaft for the present, and put the men to rise for stoping on the caunter lode, above the shallow adit; the lode is looking well, and will yield, on an average, from 6 to 10 cwts. of ore per fm.

HAWKMOOR.—The lode in the engine-shaft is 2½ feet wide, and worth about 30*l.* per fm. The lode in the 20 fm. level east is 3 ft. wide, carrying a leader of ore 18 in. wide, worth 20*l.* per fm. We have communicated the rise to the 10 fm. level, and put the men to cut a winze plat in the 20 fm. level. The pitch in the back of the 10 fm. level east is yielding good work for tin.

HENNOCK (SILVER-LEAD).—I put two men to work on Wednesday where we first cut the white lead, and I find they are getting some exceedingly good work for lead. The men raising gossan will draw up to-day from 15 to 20 tons, from which I shall send samples to the different smelters for sale. They are getting on very well with the engine-wheel; the last few days we have had very fine weather for our surface operations

HOLMBUSH.—No improvement has taken place in the lode in the 120 fm. level south; it is full 6 ft. wide, composed of hard quartz, and at present producing stones of lead only. We had a similar bar of hard ground in the 110 fm. level, just over the present one, but beyond it a productive lode, which we hope will be the case in the 120; the lead part in the bottom of the level (driven over) is 2 feet wide, but it cannot be wrought on until drained by a deeper level, the water being very quick indeed. The stopes in the back of the level will produce 1½ ton per fm., but we have suspended them for a short time only, in order to push on the level as fast as possible, to get through the bar of hard ground. The ground in the 120 fm. level cross-cut south, towards the flap-jack lode, is very favourable indeed; I never saw it so soft and speedy for exploring. The lode in the 110 fm. level south is 3 ft. wide, composed of soft quartz and stones of lead—opening tribute ground. The flap-jack lode, in the 100 fm. level, east of the great cross-course, is 2 ft. wide; a very regular compact lode, but at present it is nearly all muncie; there is more water issuing from the end now than we have seen for some time past, which is a good indication, so far as past experience goes on this lode, that just before we met with a course of ore we had an increase of water, so that I think there is reasonable hopes that such will again take place, and that shortly.

HEIGNSTON DOWN CONSOLS.—The lode in the 20 fm. level, west of Hitchins's shaft, is without important alteration. The lode in the 35 fm. level, east of the cross-cut, is worth at least 20*l.* per fm.; the lode in the winze sinking below this level is about 2 ft. wide, of great promise. In the 45 fm. level, east of Bailey's engine-shaft, we have cut another branch of spar giving out water, which strengthens the opinion as to the main part of the lode being still north of the part being driven on.

KIRKCUDBRIGHTSHIRE.—The lode in the 50 end west is 3 feet wide, with a branch of ore, yielding 6 cwts. to the fm., on the south side, and a large branch of jack by it. The lode is still very open; it has completely drained the 40 end above it, and yielding a deal of water, so that it has prevented us from sinking Stewart's shaft and driving the bottom ends for the last month. We have finished sinking Keith's shaft,

and set the "incline" to be brought down to the 63, and the levels to drive east and west: the lode is large, but unproductive. We have resumed driving the 40 end west again: it is large and speedy for driving, with small branches and spots of lead on the south side; it is quite dry.

LAMHEROOE WHEAL MARIA.—In driving north in the 60 fm. level engine-shaft, we have just pricked the lode on the eastern side of the cross-course, and have cut into it 2 ft.; so far as can be seen, it bids fair to make a promising lode; it will take some days to ascertain its size; its heave is 9 fms. 4 ft. Having intersected this lode about 10 fms. eastward from the engine-shaft—viz., 6 men driving east of cross-course, 6 driving west of cross-course on the lode, and 6 to continue cross-cut north, to intersect the Great Wheal Maria lode. With these men employed, and at Davey's 6 driving north, and 6 south, in the 50 fm. level, will make in the whole 30 men underground, which will make our cost about 250*l.* per month, our object being to test the lodes as speedily as possible.

NORTH WHEAL TRELAWNY.—The ground in the east cross-cut, extending east and west of the engine-shaft, is a dark blue killas stratum, very congenial for lead, but rather troublesome for exploring, in consequence of so great an influx of water that every hole is obliged to be clayed before it is exploded.

RHOSWIDDOL AND BACHEIDDON.—The ground and air continue favourable for driving in Prosser's level cross-cut—more than a fathom a week being cut. The stope east of Smithy level continues good. The ground is rather stiff in Davies's cross-cut. In John Francis's shaft the ore is still poor. The men driving the cross-course in Smithy level west are in junction with Augustus lode, and are driving in orey ground east and west; appearances are very favourable. Driving the Augustus lode west in the first cross-cut, we are still in an excellent course of ore. The Augustus shaft is in a good lode, producing fine stones of ore. The old Smithy level is also producing ore, but not so good as the Augustus shaft. At Nant shaft, the stope in the end of 10 fm. level is the same as before; there is no difference in the other stopes in this level. The end of the 17 fm. level driving east has been in a very good course of ore; but, at the end of this week, it is not quite so good. This was the character in the level above—generally good, with barren places sometimes; the stopes in the back hold good, as also the bottom. I am sorry we cannot recommence dressing ore to-day—it freezes as hard as ever; we have pile upon pile of excellent stuff ready for the floors, which are quite full. When the weather does break up, we shall very soon have another cargo ready for market.

SOUTH WALES MINES.—The south, or Frongoch, lode in the deep adit, east of the Rhydvet river, is a little improved since last reported; there is still an increase of spar and a little more lead, but not sufficient to set a value on. The lode in the winze, under the deep adit, is much the same as when last reported, being 6 or 7 ft. wide, composed principally of slate, mundic, spar, clay, and a little lead. Agreeable to your wish, I have suspended driving the shallow adit at Dalwin.

TRELAWNY.—In the 82 end, north of Phillip's shaft, the lode is 3 ft. wide, worth 12*l.* per fm.; in the same level, south of ditto, the lode is 3 ft. wide, worth 5*l.* per fm. In the 72, north of ditto, the lode is 2½ ft. wide, worth 8*l.* per fm. In the 62, north of ditto, the lode is 3 ft. wide, worth 9*l.* per fm. Trelawny's shaft is now down 2 fms. 4 ft. below the 82, and the ground much the same as last reported. The cross-cut towards the lode, in the 82, is driven 8 fms., and we have now got the capels of the lode, which is discharging a large quantity of water. We expect to get into the main part of the lode in a few days. In the 72, north of ditto, the lode is 3½ ft. wide, worth 8*l.* per fm.; in the same level, south of ditto, the lode is 3½ wide, worth 7*l.* per fm. In the 52, north of ditto, the lode is 1½ ft. wide, worth 7*l.* per fm. At the north mine, in the 55 end, north of Trehane, the lode is 18 in. wide, interspersed with lead, and letting go a pretty deal of water. We have cut the lode in the 40, north of Smith's shaft, where it is 1 foot wide, producing some good stones of lead. In the winze in the bottom of the 30, north of ditto, the lode is 2 ft. wide, worth 6*l.* per fm. We continue to receive our usual supplies of work from the stopes. We expect to sample tomorrow 100 tons of best, and 40 tons of mundic ores.

TRELEIGH CONSOLS.—The 100, west of Garden's, lode 3½ ft. wide, poor. The 90, west of ditto, lode 20 in. wide, with stones of ore. The 80, west of cross-cut, on the north part, 2 ft. wide, worth 4*l.* per fm.; the 80, west of ditto, on the south part, lode 20 in. wide, with stones of ore. The 70, west of Garden's, lode 2 ft. wide, worth 4*l.* per fm. At Wheal Parent, the engine-shaft below the 40, sinking in the country. The 40, east of ditto, lode 2 ft. wide, with stones of ore. The 40 cross-cut, south of ditto, driving towards the middle lode. The 30, east of ditto, lode 18 in. wide, worth 3*l.* per fm.

WEST WHEAL JEWEL.—The 85 fm. level, west of Williams's cross-course, on Wheal Jewel lode, not taken down in the past week—when last taken down worth 3*l.* per fm. The 70 fm. level, west of ditto cross-course, on same lode, when last taken down worth 20*l.* per fm. The 57 fm. level west, on same lode, worth 5*l.* per fm. The 47 fm. level, east of ditto cross-course, on same lode, worth 3*l.* per fm.—no lode taken down in any other level in the past week. The stopes in the back of the 12 fm. level, west of Pryor's winze, on Tolcarne tin lode, worth 14*l.* per fm.; the stopes in the back of the 12 fm. level, east of ditto winze, worth 15*l.* per fm.; the stopes in the bottom of the 12 fm. level, east of Tregoning's shaft, on Tolcarne tin lode, worth 25*l.* per fm.; the stopes in the bottom of this level, west of Tregoning's winze, on same lode, worth 23*l.* per fm. These stopes are working on tribute.

WHEAL BENNY.—Mr. Adam Murray, jun. (Jan 14) reports.—This sett is on the south side of the River Tamar, opposite to Lamheroce, and comprises a portion of the northern base of Heigraston Downs and Kitt-hill. The ground rises at first steeply from the river to about 60 or 70 fms., and then gradually continues upwards to the downs, which are 160 or 170 fathoms in height. The explorations on this property consist of drivings, from nearly the level of the river on the course of two of the northern lodes, which are the southern ones in Lamheroce; the other lodes to the south have not been seen, but doubtless there are several more in this property, which measures 400 fms. in length, by 500 or 600 fms. in breadth. The first, and most northern lode worked on, is called the Ford lode, and has its direction north of west 18°. Near the river a shaft has been sunk on it to the depth of 30 fms., and at 7 fms. in this shaft a level has been driven both ways on the course of the lode, which varies in dimensions, and the character is mostly hard and uncongenial for copper, except to the westward, where, for a fathom or two, a small orey portion has been stoped away, but the lode for a few fathoms further to the end has again become hard, partaking of a chloretic nature, intermixed with mundic, &c. Further westward, at the brink of the river, a large shoot of ore is supposed to exist from favourable indications on the surface, and for this object a level is extending from the bottom of the shaft (the 30 fm. level) to intersect it; but the want of power in the water-wheel, to drain to that depth during the wet season, has stopped the work for the time. So far as this lode could be seen in the 7 fm. level, and on the surface, I should imagine the shoot sought for to be a similar orey deposit to the one mentioned, but of much greater dimensions, and may be of much greater value, but I do not think there is much evidence of its probable richness. The next, and more southern lode, and upon which more work has been done, is called the Benny caunter, as it varies from the direction of the lodes generally, being in this case 15° more to the northward. An adit is opened on this lode to the extent of 40 fms., from whence the lode is heaved to the south 5 fms. by a cross-course, and the adit continued on the lode about 10 fms. more. In this level the lode is uniformly about 3 ft. wide, of a hard capelly character, intermixed with yellow and white mundic, and copper, but not in sufficient quantities to pay. In the inner, or second part of the adit, the lode has been stoped away, a portion containing more copper, which appears to dip westwards towards the cross-course, and in consequence of this, apparently, a winze has been sunk on the first part of the adit about 5½ fms. before its intersection by the cross-course, to the depth of 11½ fms. on the underlay of the lode, where it is again intersected by the cross-course, and a level is now driving northward in the channel to take the lode heaved at this depth, in expectation of meeting the shoot (if a more orey part of the lode may be called so) alluded to as existing in the latter part of the adit; this level, from the winze, will have the effect of proving this, and also whether the lode has much chance for improvement in the hill. These explorations, with some slight costeanings in the hill, form the extent of workings in this sett; and, in considering their probable result, a review of their geological position may be of great assistance. The stratification of the sett is much diversified, the chief layers of which are of an argillacious character, interspersed with hard talcose slates, red and variegated slates, felspar and quartz rocks, with perceptible layers of volcanic ash. These beds appear to be upraised by the granite of Kit-hill, and continue on its northern flank in an unbroken mass to the River Tamar, where the effects of denudation have made a section of the upper layers, through which the Benny levels are driving, leaving the lower part of the group overlaying the valley, and still covering to some extent the more primative rocks at Lamheroce, and the adjacent country. In this group the lodes are subject to variable influences, and are generally hard and uncongenial; eastward, lower down the river, several small workings have proved, and are proving, this to be its character; westward, at Lamheroce, where shafts have been sunk below the influence of this group, the value of the Benny lodes, when they arrive in a more settled and primitive strata, will be much more speedily ascertained, and form a useful index to the future exploration of this and adjoining setts.——*Jan.* 23.—We yesterday pricked the capels of the Benny lode, and, as far as can at present be seen, the lode bids fair to be very promising going east, and, as soon as we have cut into the lode, which will take a few days, you shall receive full particulars of its size, probable value, &c.; but no decided results can be expected until the lode has been proved, by being opened on eastward.

WHEAL LAWRENCE.—We have during the last month driven 11 fms. in the adit level, and for 5 fms. we have been driving through an east and west course, containing gossan, blue killas, mundic, and some beautiful stains of copper, and I think it will make copper when out of the influence of the great cross-course. The part of the lead lode against the east and west course is certainly the richest looking ground I ever saw, and I have now even a better opinion of the lode than ever I had; and after the shaft is holed to the adit level, I have no doubt we shall cut lead in going through the lode. We have only a few feet more to drive before we get parallel with the shaft, and 5 fathoms more to sink in the shaft, and I hope to hole by the end of the month. Wheal Lawrence cannot fail of making a good mine.

WHEAL MARY ANN.—Pollard's shaft is sunk 10½ fms. under the 50 fm. level. The lode in the 50 fm. level, north of the shaft, is 3 ft. wide, and worth 12*l.* per fm.; in the same level south it is 2 ft. wide, producing good stones of lead. The lode in the 40 fm. level, south of the shaft, is 2½ ft. wide, composed of can, barytes, and lead. The lode in the 30 fm. level south is 1 ft. wide, spotted with lead. The lode in the 15 fm. level is 1 ft. wide, composed of gossan and barytes. The lode in the 60 fm. level, south of Barratt's shaft, is 3 feet wide, and worth 12*l.* per fm. The lode in the 50 fm. level, south of the shaft, is 2 ft. wide, and worth 10*l.* per fm. The stopes generally are producing a fair quantity of lead. We sampled last Tuesday a parcel of lead ores, computed 74 tons, which will be sold on the 24th inst.

WHEAL PENHALE.—The lode in the north end, 30 fathom level, is now about 6 ft. wide, good saving work throughout; in the cross-cut from the south end, in this level, we have intersected the lead lode, and it gives me very great pleasure in being able to add that it is, from all appearances, a very good one indeed; we have cut into it about 1 ft., which we find to be all but solid lead and copper; from the quantity of water issuing out of it, I think it is very large, several brawers are falling into this lode, from that represented in my last as being met with here, which contribute very materially to its value, they being very rich. In the 10 and 20 fm. levels, it will be remembered that the lode and ground for some considerable distance, especially north from the engine-shaft, were and still are very disordered; while in the 30 fm. level every thing appears to be quite in a matured state, the ground, though a little hard, being a beautiful killas, and the lode has its regular walls on either side, without being intermixed with capels, killas, or any other (I was going to say) superfluous matter. In the end, in the 20 fm. level north, the lode is about 3 ft. wide, and is a very good one, the whole of which is very good work in lead and copper. We have this week been driving the 10 fm. level south on that part of the lode opened in stripping down the middle shaft, and find it much improved; from its inclination west, we presume it will shortly fall in with that part anticipated to be gone off there. The tribute looks very well. The good appearance of the mine, and particularly the 30 fm. level, are such as warrant, without delay, the sinking of another lift.

WHEAL TREHANE.—We have now driven the 78 cross-cut 22 feet, and, about 2 ft. behind the present end, intersected a branch 4 inches wide, letting out a great quantity of water; and, as the end is dry, I have no doubt that this branch, with several others previously cut through (being composed of spar, with occasional stones of lead), are the lode divided; these branches are fast approaching each other northward; and, to prove that it is the lode (which can be done in a few days), I have put the men to drive in that direction. In the 68 fm. level south, and also in the north end, at the same level, the lode is worth about ¼ ton of lead per fm.; the stopes in the back of this level are just as last reported, worth 18*l.* per fm. The stopes in the back of the 62 fm. level are producing 11 cwts. of lead per fm. The lode in the stopes, in the back of the 55 fm. level, is worth 9 cwts. of lead per fm. The stopes in the back of the 45, and bottom of the 35 fm. levels, are turning out tolerably well.

WHEAL VINCENT.—The water is again nearly in fork to the bottom of the shaft on the north lode; we hope, in the course of a day or two, to see more of its quality, &c. There has been no lode taken down at No. 2 and 3 shaft this last week, but shall do so in a day or two; we are now stamping the last taken down. I am happy to state we find it equal to expectation. The lode in the bottom end driving west is much improved, both in size and quality, and the ground is a little softer. Since the change of weather, we are getting on with all speed with our surface-work, &c.

FOREIGN MINES.

AUSTRALIAN MINING COMPANY—*September 7.*

The Tungkillo Mine setting list shows the total number of men employed, 68; and the produce of the entire as 20 cwts. of copper ore sent to the port, and supposed to yield 26 per cent., 412 tons; now lying in and on the mine, 198: total, at 26 per cent., 610.—20 cwts. now lying at surface, from 10 to 12 per cent., for smelting, 590: total raised from commencement, 1200 tons.

Tungkillo Monthly Report.

The ground in the winze, below the 40, on the side lode, between Richards's and Harvey's cross cuts, is much more favourable than it has been for sinking, the price for sinking being now reduced to 18*l.* per fm., in consequence of the strata on its eastern side being decomposed granite; the lode is composed of quartz and gossan, and contains native copper, carbonate, and pyrites, worth about 36*l.* per fm.; this winze is now 29 feet below the 40; the 40, north from Harvey's cross-cut, on the side lode, is not quite so hard as it has been, the price being now 24*l.* per fm., and is also in an improving state, producing blue carbonate, massive and much crystallised; 3½ fms. only remain to communicate with the end driving south from Carter's cross-cut near Masterman's shaft; this end will produce 100*l.* of ore to the fm.; the 40, south from cross-cut, near Masterman's shaft, on the side lode, is now producing about 36*l.* worth of ore to the fm., and is promising to improve; about 3½ fms. remain to communicate this end with the 40, north from Harvey's cross-cut. Masterman's shaft is now 9 fms. below the 40, and is composed of hard flinty quartz, containing a large quantity of iron pyrites, and about 30*l.* worth of copper pyrites (much disseminated) to the fm., and which cannot be separated without a stamping-mill; we have 1 fathom more to sink at 60*l.*, when we shall drive west, to cut the side lode, and which cross-cut we expect will be no more than 1 or 2 fathoms. The lode in Good's stopes, continues to yield the usual quantity of ore—the quality of which was never better, if so good, as at the present time. The lode in Stephen's winze is producing excellent stones of copper pyrites—a specimen of which produced above 30 per cent., and the winze is promising to be more productive; it is now 6½ fms. below the 40. The driving of the 30 north, on Baker's lode, has been discontinued since Sept., 1848, in consequence of the cost of wheeling. The railroad now being laid down in the 40, we can extract the stuff with much greater facility, and without obstructing the operations in other places; the driving of this level is, therefore, resumed; the lode shows stones of ore, and is favourable for driving. In the 30, north from Kendall's winze, on the side lode, we have, in the past month, driven 9 fms.—4 fms. of which is a course of ore, averaging full 40 per cent., 3 ft. wide in the bottom, and 1 ft. in the back of the level; in the present end the lode is composed of gossan and quartz, much coloured with green carbonate along the bottom of the level, from which we have reason to hope there is a large body of ore between this level and the 40. Kendall's winze below the 30, on the side lode, is now within 3 fms. of the 40; the lode is chiefly gossan. We expect to hole to the 40 this month, when, by starting the first stopes on the side lode, we shall increase our monthly produce. Two men are employed to drive south on the side lode in the 30 fm. level from Montefiore's cross-cut, where it is 12 ft. wide of gossan and quartz—very promising, but no ore at present.

In the 40, north from Carter's cross-cut, near Masterman's shaft, on side lode, there is a vein of ore 2 ft. thick, making a per centage of 40, but is approaching towards Baker's lode, so that we are not likely to get a much greater length on it; it is now worth full 30*l.* per fm. Six men are employed to level the ground in the 40, to continue the railway on to the extreme end of that level, preparatory to driving north from Phillips's winze, so that the mine will be in a good state of working; both the 30 and 40 will then be extended into the unexplored ground, with the prospect of making fresh discoveries. So far as we have gone in depth, both on Baker's lode and the side lode, every foot of them is productive of copper, and maintain their usual large size. The ores, however, below the 40, are more scattered, and will require stamping mills to dress them, which, I expect, will be the case to a great extent in the 50 fm. level, and we shall probably have to sink, perhaps, below the 50 before the lode settles itself into solid ore, which, I expect, will ultimately be the case. It is highly satisfactory to find so little water in the mine; one horse in the engine effectually drains off the water, so as to allow us to sink Masterman's shaft and Stephen's winze on Baker's and Richard's winze, on the side lode, at an expense of 30*l.* to 40*l.* per month. The expected engines will be of ample power, I expect, not only to drain the mines, but to drive machinery for stamping and crushing, which will be indispensable appendages in the future working of the mine, but to what extent they will be required I shall know when the mine is laid open in the 50 fm. level.

Oct. 3.—Masterman's shaft is now down to the 50, and we have cut soft ground in the bottom of it. I, therefore, intend to sink 1 fm. deeper, in expectation of having the cross-cut in better ground. Kendall's winze is holed in the 40, and we commence stoping this ground next month. The 40, north from Harvey's cross-cut, is also holed. We have now cut out the ore ground over the 40, as much as we can take away in two years, in which time we may deepen the mine, and be working in 50, 60, and 70 fm. levels, which will give us a fair chance of having a first-rate mine. Before smelting can be carried on, a stamping mill will be required, by means of which my opinion coincides with the dressers, that the smelting ore may be made to produce 15 per cent., instead of from 10 to 12, as stated in my monthly reports. During the time of erecting the engines, we shall require about 10,000 ft. of sawn timber per month, for which Mr. George Dunn will contract at 14*s.* per 100 ft., and I have written to the manager of the Cox's Creek Stream-saw Mills, to ascertain if we can get it from there on more advantageous terms.

Oct. 5.—*Produce of Tungkillo Mine:*—

Total quantity of ore sent from the mine to Port Adelaide, supposed to yield 26 per cent.	21 *cwts.*	420
Supposed 26 per cent. ore now lying on the mine		40
Supposed ditto on the floors ready for cartage		165—645
Lying in and on the mine (smelting ores) from 10 to 12 per cent.		645
Total	21 *cwts.*	1290

The new engine-shaft, 70 fms. north of Masterman's shaft, is fixed in such a position as to intersect Baker's lode in the 40 fm. level.—The 30, south from Montefiore's cross-cut, on side lode: the lode in this end is gossan and spar, and contains some micaceous iron, and although a promising lode in appearance, it contains in this place little or no copper at present.—The cross-cut, west from Masterman's shaft, in the 30 fm. level: the intention of driving this cross-cut is to intersect the side lode, and as it is in the place where Baker's lode became so productive, we may reasonably expect that the side lode will be productive in this place also. In the 30, north from Phillips's winze, we are driving in Baker's flookan; in fact, there is a lode on each side of it, and there is much stains of green carbonate. Goad's stope, is in the back of the 40, the under part of which is now within 4 fms. of Stephen's winze, and still continues to yield ores of excellent quality; and I am inclined to believe it will be a valuable stope so far as, and probably beyond that winze, although it has been very doubtful if it would be so lasting. The 40, north from Phillips's winze, we have every facility for now extending into the unexplored ground; and, although the end is not productive at present, there is a good chance of shortly making a valuable discovery. The new stopes below the 30, north from Kendall's winze, on side lode, are expected to turn out well, as our miners will be working on the ore ground driven through in August, the ores from which will produce not less than 50 per cent

There being some improvement on the ground in Masterman's shaft, the price being reduced from 60*l.* to 45*l.* per fm., we have decided on sinking 1 fm. deeper, before we drive to the side lode, as by so doing we shall be likely to escape the hardest part of the ground. The portion of Baker's lode seen in the shaft contains only spots of yellow ore, and the quantity of water coming to the pump is about 10 gallons a minute, but we shall naturally have to expect an increase when we cut into the side lode. The new winze under the 40, on side lode, is about 7 fms. south from Carter's cross-cut, near Masterman's shaft; I expect the drainage in Masterman's shaft will allow us to sink this winze down to the 50 fm. level; and when that level shall be holed to this winze, it will give us more ore ground to stope away. The winze will turn out 80*l.* worth of ore per fathom, and seems promising to be durable.

The stopes south from Kendall's winze, on the side lode, will commence in the back of the 40 fm. level, in which level we have now driven through from 25 to 30 fms. of ore ground, which, in consequence of the holing of Kendall's winze, can be worked away most advantageously; and next survey day I hope to be in a proper position to commence another stope in the back of the said level, northward from Kendall's winze, by which means the monthly raising is likely to be considerably increased, should this ore ground, which is now surrounded, and properly laid open, turn out equal to my expectations. Having six spare hands from the winze below the 40, on the side lode, west from Harvey's cross-cut, which is not down to water, and cannot be further sunk until drained by the 50, I have thought it advisable to employ these men to open on and drive south from the creek on Horne's lode, being of opinion that the southern ground on that lode is more congenial for copper than the northern ground, in which direction the former workings were carried on.

IMPERIAL BRAZILIAN MINES.—*Banaual, Nov.* 18.—I beg to report that I have no doubt whatever of our surface power being ample (provided we have not an extraordinary increase of water in the bottom) to effectually prosecute the mine. Since my last respects nothing has been done on the vein in the bottom of Gibson's shaft, the time being principally occupied in preparing the ground previously sunk to receive the necessary timber work, 2 ft. of sinking having only been effected, and none of this on the vein, the latter being dug down as deep as possible, previous to the leaving of the last post, and from whence the specimens and boxes of work named in my postscript of the 3d inst. were obtained. The prills of gold are certainly of a very encouraging nature, but the quantity of work being small, the produce, of course, is in accordance. Yesterday we got two small boxes of work for the washing house from the back of the 6 fm. level, west of Thomas's, on the Big-Pump vein. The vein on which we are driving in the 6 fm. level, south of Thomas's, is yet unproductive, but the ground being easy, and the vein looking regular and promising, I shall continue its prosecution. We are making good progress in the erection of the new iron wheel, and when finished she will be an excellent machine, contrasting very much with what we have at present working.

Gongo Soco.—Here the different works are progressing as fast as our limited force will admit of. The new site for Goldsmid's stamps has been decided on, and preparations have been commenced for its re-erection; it will require, however, one new stamps axle, which we hope to obtain from our woods. The hammer mill will be ready to work some time next week, and I anticipate great advantages from it. Hitherto we are without any successful discovery in the western part of the mine; we are, however, persevering, with strong hopes of meeting with something satisfactory. There is an immense body of jacotinga yet unexplored in this part of your property, the whole of which is more or less auriferous; as a proof of this, the great western stamps has given during the last 10 days, with 10 heads only, and these working very slowly, from the scarcity of water, 2 ozs. 3 dwts. of gold. I hope that you will be pleased to see that the produce is tolerably good from the two miserably delapidated stamps—Walker's, and Johnville's; the stuff supplied to them was principally taken from the foundation of Goldsmid's stamps; this, however, they have nearly got through, when I hope their advance will be more rapid.

Gold Report.

Gongo—from 3d to 12th November	*Lbs.*	5	3	17	0			
Bananal—from 3d to 12th ditto		4	10	15	0	—10	2	12 0
Tota' from 1st July—Gongo	*Lbs.*	48	9	17	0			
" " Bananal		31	6	11	0	—80	4	8 0

LINARES MINES.—Letter from Mr. H. Thomas, dated Linares, Jan. 12:—I am this week without any new point of much interest to report to you, and for a little time, until we resume the draining under the 30 fm. level, we cannot expect much novelty. We are waiting the arrival of the iron ordered from Seville, in order to complete the balance-bob, main-rods, &c., and to make the connection to the San Gaspar winze; no time will be lost in doing this important work, as we are all anxious to make returns from the next level. We purpose early in the week to draw some stuff from the tributers and dress it; they are breaking a moderate quantity of lead ore, though not nearly so much as would be done by Cornishmen under the same circumstances.

ST. JOHN DEL REY MINES.—*Morro Velho, Nov.* 8.—Produce for Oct., 24,342 oits. = 333·85 lbs., from 8374 tons of ore (according to the returns from the reduction department) = 4·53 oits. per ton. The stamps working during the month average 94·45 heads. The supply of stone is steady, or rather slightly improved, having been enabled during the month to reject about 200 tons of the inferior ores.

Cost for October, Rs. 43,670 634, at 25½d	£4685	9 11
Produce, 24,342 oits.; less 5 per cent. duty, 1,917 oits.—23,125 oits, at 7s. 7½d.	8828	9 0
Profit	£4142	19 1

Bahu Inclined Planes.—In that called the Catherine inclined plane, the last pieces are now in their places, and there remains to put in the safety doors, the catches, ratchets, &c., all which will, I trust, be completed in the course of November, and about the beginning of December, this magnificent erection will, I trust, be in full work. Captain Treloar call it "the greatest work ever performed at Morro Velho." He says in his report, "All the hands employed about it will merit the reward promised to them, for the great care, interest, and industry they have uniformly evinced, and for the perils they have undergone—a slip of the foot, breaking of a chain, or letting fall any of the materials or tools, would, in all probability, have been attended with fatal consequences; yet not a single casualty has occurred, the men had steady hands, good heads, and fearless hearts." To this warm and well-merited eulogy I will only add, that foremost in this little band for fearlessness, skill, and energy, stands Capt. Goyen, under whose special superintendence these works have been erected.

New Bahu Hauling Machine.—After some discussion, the site for this erection has been marked out, and the lobby, or outlet, for the water from the wheel-pit has been commenced. In paragraphs 21 to 26 of his mine report (to which I crave your reference), Capt. Treloar details, with his usual minuteness, the reasons for this undertaking.

THE WORTHING MINES (South Australia).—The following is the agent's report, dated 21st Sept.:—In accordance with your instructions, we have again commenced operations on the Worthing property. During the month of August four men were set to work to sink the whim, or engine, shaft, at the place indicated in Capt. Phillips's plan; at the same time four men were set to sink an experimental shaft midway between the two original workings, termed by us the "middle gulley;" this latter has been entered upon by advice of Capt. Phillips, so as to determine the final position of the engine-shaft, as much will depend on the appearance of the lodes at this place. We are about calling for tenders for the erection of six cottages and a horse-whim. As we are now daily expecting full advice and instructions from the directors of the Worthing Mining Company, we have not considered it expedient to enter into any extended contracts or large expenditure.

UNITED MEXICAN MINES.—*Guanaxuato, Dec.* 7.

Mine of Rayas.—Mr. Parkman's monthly report on the mines generally is enclosed herewith; and with reference to Rayas in particular, it will be observed, that although the produce of ores is larger in quantity, the produce of silver is less in proportion. These mutations, however, are common place, and of short duration, and so far from causing surprise, should be expected occasionally.

	Picked Ores.	*Half Sales.*	
Four weeks to 3d November	2900	$ 9773	7 4
Four weeks to 1st December	3050	2300	0 0
Cargas	150	$ 473	5 4
	Increase.	Decrease.	

Mine of Aldana.—The sinking of the shaft is continued with all practicable activity, and exceeded 12 varas last month, in the course of which a small transversal thread of ore was cut, giving 41 marcs of silver per monton, which fairly indicates the character of the main lode, now about 40 varas off. A communication will be shortly made between the shaft and the interior pit of Santo Toribio, with the twofold object of ventilation and transit.

Mine of Promontorio.—Some of the points are partially suspended, and the outlay has been proportionally less—the chief difficulty, however, being the extreme hardness of the rock, which suggests the occasional alteration of locality and operations. The want of ventilation is also a drawback, but susceptible of early remedy.

Mine of Jesus Maria y Jose.—The horse-whim, and timbering of the month of the shaft having been completed, the sinking of the shaft was commenced this week, and will, I trust, now continue without further interruption.

Remmittances.—By the Tampico conducta, to leave hence in about a month, I purpose to forward $ 30,000 for shipment to the court.—J. N. Shoolbred.

Report on the State of the Workings in the Mines of Rayas, Aldana, Promontorio, and Jesus Maria.

Mine of Rayas.—The workings of buscones continue poor, and there is very little competition for the ores produced.

Frente of Santo Toribio.—This work has advanced 6·22 varas in five weeks. During the past week the ore in the end has declined, but there is room to hope that, by inclining the work more to the right, we shall get again into better ore. The pozo near the end is giving a small quantity of good ore, and has improved in going down. The contra cielo of La Purisima continues in fair ore, and the extraction would be much increased were it not for the want of ventilation. This has, however, been partially improved by a communication made in the last few days between Jesus and Santo Toribio. In the pozo of Santo Toribio, after concluding the drainage, working on ore has been resumed; the produce is considerable, but the ley at present is low. In San Crecensio the ore going downwards has declined, but continues good to the north-west. There are other points, such as San Antolino, San Ignacio, and San Miguel, in which barmen are employed, and produce a small quantity of good ore, but they present no probability of speculative interest. The nominal number of barmen continue the same as heretofore, but that number is rarely made up at night. The ore remitted to the haciendas in four weeks amounts to 3050 cargas.

Mine of Aldana.—The shaft of this mine has been sunk in the month 12·02 varas, making its total depth 98·77 varas. A very few samples of good ore, which have been found in some small veins which traverse the shaft, may be mentioned, merely as encouraging indications as regards the nature of the mountain traversed by the vein. The pozo of Santo Toribio has advanced 8·06 varas, without any change worth mention. The progress would be greater were it not for the want of ventilation, but this will soon be remedied by a communication with the shaft. In the annexed mines of Santo Varones and San Luis Gonzaga, the amount of work is being performed which is barely sufficient to protect them from denouncement.

Promontorio Mine.—In the level of Santa Catalina a change was made in the direction of the same, towards the lower wall of the vein, in the hope of meeting with softer and more productive ground; 5·27 varas have been driven, in which the ore has improved, but the rock continues hard. The workings of buscones continue poor. The work in San Feliciano commenced for ventilation after one week was suspended: the ore had declined, and the rock became extremely hard. A point, supposed to be more favourable, was then selected, and the work is now in progress.

Mine of Jesus Maria.—The malacate being finished, and the timber work in the mouth of the shaft nearly so, we shall in this week be enabled to commence sinking.

S. P. Parkman.

Mineral Veins.—MM. Malaguti, Durocher, and Sarzeaud announce that they have detected in the waters of the ocean the presence of copper, lead, and silver. The water examined appears to have been taken some leagues off the coast of St. Malo, and the fucoidal plants of that district are also found to contain silver. The *F. serratus* and the *F. ceramoides* yielded ashes containing 1-100000th; while the water of the sea contained but very little more than 1-1000000000th. They state also that they find silver in sea salt, in ordinary muriatic acid, and in the soda of commerce; and that they have examined the rock salt of Lorraine, in which also they discover this metal. Beyond this, pursuing their researches on terrestrial plants, they have obtained such indications as leave no doubt of the existence of silver in vegetable tissues. Lead is said to be always found in the ashes of marine plants, usually about an 18-1000000th part, and invariably a trace of copper. Should these results be confirmed by further examination, we shall have advanced considerably towards a knowledge of the phenomena of the formation of mineral veins.

Ancient Mining.—At the last meeting of the Archæological Institute, the Hon. W. Stanley communicated an account of recent discoveries in North Wales, relating to the working of the copper mines of that district at a very early period. In October last, an ancient working of great extent was broken into at the Llanderdero Mine, Orme's Head. The roof and sides were coated with stalactites, exhibiting brilliant colours from admixture of metallic substances. A great number of stone hammers or mauls were found, supposed to have been used in crushing the ore. Large quantities of bones of animals lay in the cavern, which appeared to have been gnawed by wolves, but may have been left by the miners. Some of these, with the rude implements of stone, were sent by Lady Erskine, through Mr. Stanley, for exhibition; as also portions of bronze tools, of interest as indicating the character of these metallurgical operations in remote times, regarding which very little has been ascertained.—The Rev. W. Haslam sent some notices connected with the same subject, in reference to the tin works of Cornwall, accompanied by drawings of some blocks of metal, considered to be of the times of the Phœnician traders with these islands.

Valuable Lode of Silver-Lead.—William Wyman, Esq., of Cargreen, having granted the sett of his estate at Ell-bridge, in the parish of Landulph, operations were commenced on Monday last, and on the following day, when, only about 3 ft. from surface, the lode was opened on, and some splendid stones of silver-lead ore were raised, producing, after being carefully dressed, 10 in 20 for lead, and 200 ozs. of silver in the ton of ore.—*Plymouth Journal.*

ACCIDENTS.

Sheffield.—A shocking accident took place in the Gallowstree Pit, Kimberworth-field, the property of Mr. Chambers. While W. Nelson was preparing for a blast, an immense stone, weighing several tons, fell upon him, and instantly crushed him to death.

Dudley.—J. Griffin was killed by a fall of coal, while working in a pit at Bumble Hole Colliery.——T. Davies has died from the effects of injuries received by an explosion in a pit at Brades Hall Colliery. The *Birmingham Journal* says, the occurence took place entirely through the unfortunate deceased taking a lighted candle into a portion of the pit where sulphur was known to exist, contrary to the order of the doggy.

West Bromwich.—John Partridge was killed by a fall of coal in Mr. Halford's pit, at Hill Top; and James Archer died from the effects of injuries received in Messrs. Spittle and Haine's pit, at Black Lake, about 11 weeks ago.

Stourbridge.—James Harding was killed by a quantity of earth falling upon him while at work in a pit at Nager's Field Colliery, Brockmoor.

Explosion at the Pembrokeshire Iron and Coal Works.—A mischance of a very serious nature occurred at these works, the cause of which is not exactly ascertained, but it is supposed, from the wind being boisterous at the time, the engine came to a stand, and the valves not being closed, the pipes and gas cylinder burst, and a dreadful explosion took place, which carried off the roof of the engine-house, blew out the windows, shattered the doors, and considerably damaged the machinery; very providentially, however, no lives were lost—one man was knocked down, but received no material injury.

EAST TAMAR CONSOLS MINING COMPANY,

The usual two-monthly meeting of shareholders was held at the offices, Threadneedle-street, on Thursday, the 24th inst.

W. A. THOMAS, Esq., in the chair.

The cash account, showing balance of 162*l.* 5s. 7d. in favour of mine, as also an estimate of liabilities and assets, the former amounting to 1576*l.* 3s. 6d., and the latter to 2723*l.* 0s. 2d., were laid before the meeting, and passed. The cost-sheets for Oct., Nov., and Dec., with the merchants' bills, were exhibited, and passed.—The SECRETARY stated that the Tamar Smelting Company's tender of 14*l.* 15s. 6d. for 65 tons 8 cwts. 3 qrs. silver lead ore had been accepted, being the highest tender.

The following report, from Capt. J. Wolferstan, was read to the meeting:—

Beeralston, Jan. 22.—The sumpmen have resumed sinking the engine-shaft; it is now down about 3 fms. under the 80 fm. level; the ground is much more favourable in every respect than it has been since we first commenced working: the lode in the bottom of it is 3 ft. wide, with a branch 15 in. wide of good solid work. In the 80 fm. level the lode in the south end is 3 ft. wide, easy for driving, and producing good saving work; the indications are good, and the end is rapidly advancing towards a winze now sinking in the 70 fm. level, and in which there is a lode worth on an average 10 cwts. of ore per fm.—In very congenial ground. In the 70 fm. level the lode for the last two months has yielded on an average 9 cwts. of lead per fm.; there is a great improvement in the character of the lode, and the nature of the ground, as compared with what it was in the level above; in the north end the lode is 3 ft. wide, and worth 6 cwts. of ore per fm., and likely to improve in value. In the 60 fm. level, the lode in the south end has much improved during the last fortnight; it has opened out, and become worth 5 cwts. of lead per fm., with every appearance of improving daily; in the north end the lode is 2½ ft. wide, its size is diminished by a small slide come into from the western side of the level, but which does not appear to be going through it; still it is a good lode, and yielding a fair quantity of ore; about 3 ft. behind the end, and in the back of the level, the lode is 4½ ft. wide, worth 8 cwts. of lead per fm. The pitches are more productive than usual, and as there is a general improvement throughout the mine, I trust we shall be able, by delaying the sampling for a few days, to prevent any material falling off in the usual quantity, which would otherwise be the attendant consequences of the late serious accident, which caused us much inconvenience, and threw some of the pitches out of working for full a month. The water has again receded below the 25 fm. level, at Churchlane shaft, and we purpose resuming all operations at this part of the mine next survey day. The engine-house at Gullett's will be finished early next week, when we shall commence putting in the engine, and fixing the pitwork, so that I hope, ere long, to have the whole of the south part of the mine in full operation, from which good results may be most confidently entertained.

SOUTH TAMAR CONSOLS MINING COMPANY.

The usual two-monthly meeting of adventurers was held at the offices of the company, Threadneedle-street, on Thursday, the 24th inst.,

W. A. THOMAS, Esq., in the chair.

The cost-sheets for Oct., Nov., and Dec., as also the cash account, showing a balance of 519*l.* 17s. 1d. in favour of the mine, likewise an estimate of liabilities and assets (the former, 497*l.* 10s. 8d., and the latter, 2342*l.* 16s. 10d.), were examined and passed.—The following report from Mr. James Wolferstan was read to the meeting.—

The engine-shaft is sunk 5 fms. under the bottom of the 100 fm. level; the lode in it is about 3 ft. wide, with a good branch of lead; the ground is congenial, but troublesome to sink in, as it is rather too tight to work, and yet not sufficiently close and compact for powder to be properly effective. In the 100 fm. level, the lode in the north end is 2½ ft. wide, easy for driving on, and worth 3½ cwts. per fm; in the south end the lode is 4 ft. wide, and worth full 5 cwts. of ore per fm. We expect an improvement here every day, as the lode presents highly-promising indications, and the end is getting under ground that was much more productive in the 90 fm. level. In the 90 fm. level, the lode in the south end is 3 ft. wide, very easy for driving, and worth 8 cwts. of ore per fm. In extending this end, we have laid open a large extent of good tribute ground, the average driving being about 8 fms. per month for the last three months. In the 80 fm. level, the lode in the south end is in a disordered state, not being free from the influence of a slide. In the 70 fm. level south the lode, which for a considerable time past has been small, is now 4 ft. wide, and producing 12 cwts. of lead per fm. On its first changing it was worth 20 cwts. per fm., it is now regular, and likely to continue as at present. In the 60 fm. level we have taken down some ground at the point of a "horse," and discovered a good lode to the eastward of former workings. We shall have a high back on this lode, as it is apparently untouched at the upper levels; we are driving a cross-cut further south, with a view to intersect it. In the 30 fm. level we have cut a tip-plat, and laid down a tramroad home to the south end. A fortnight since we resumed driving on the lode, which is 5 ft. wide, composed of capel, with good branches and strings of rich silver-lead throughout. Glynn's shaft, 50 fms north of the engine-shaft, is cleared for about 52 fms from surface. We are forcing this work as much as possible, being anxious to open the lower levels to it for the purpose of ventilation, and to explore the north part of the sett, which from report is likely to prove very productive. This shaft is known to be sunk to our 90 fm. level, and may be deeper. The pitches have improved during the past week, and we shall sample from 68 to 70 tons of ore on the 9th February. This quantity will be the produce of seven weeks' working. In conclusion, I am happy to say the mine continues to improve, and there is every prospect of a steady increase in the returns.

The thanks of the meeting were given to James Wolferstan, Esq., the manager, for the continuance of his zealous and unwearied exertions in developing this mine.

HENNOCK SILVER AND LEAD MINING ASSOCIATION.

At a special general meeting of shareholders, held at the offices, Winchester-buildings, on Tuesday, the 22d instant,

JAMES FORSYTH, Esq., in the chair,

The SECRETARY produced a statement of receipts and disbursements from the commencement of operations in July, when it appeared that there had been received in calls 400*l.*, and expended 382*l.* 1s. 6½d., leaving a balance in hand of 17*l.* 18s. 5½d.—The following report of Capt. James was read, and deemed highly satisfactory:—

We have sunk the engine-shaft 5 fms. 1 ft. under the adit level, where we cut so much water, that we can sink no further until the pumps are fixed, and we get the engine to work. There is a very good soft killas in the shaft. We have holed the air-shaft, and have now plenty of air for all purposes in the adit level. I find that the shaft is not sunk upon the same lode that the adit is driven on, and I strongly suspect that the main lode has not been worked upon under the adit level; the two lodes are more than 30 ft. apart in the shaft. I have set a bargain to four men, to raise and bring to surface 20 tons of gossan and carbonate of lead from the back of the adit level, at 4*l.* a ton. I shall have samples assayed for my own guidance by Capt. Prince, of Wheal Adams, and if it realise what I expect it will, we can very soon bring 5000 tons into the market, and we shall have as good a mine as any in Devon. When we have 20 tons to grass, I intend to clear the adit level still further south. The weather has been against our surface operations, but I think, however, that in a month from this time we shall get our engine to work.

The SECRETARY stated, that the costs to the end of February were estimated at about 500*l.*, which was a very small sum in comparison with the results likely to follow the expenditure; for the shareholders should bear in mind that the unusual discovery of carbonate of lead and gossan, containing silver and copper, found in such quantities between the adit level and the surface, was an agreeable addenda, as it were, to the more valuable galena expected to be found at a few fathoms below that level. That it was gratifying also to know that, within the last few days, a good lode had been cut at Wheal Exmouth, which sett immediately adjoins Hennock; that the lode at Wheal Adams, worth 150*l.* a fm., continues to improve; that the same great lode had been cut at Bridford, and was daily expecting to be cut at Wheal Lawrence; and that, judging from the indications in the shaft at Hennock, it was fair to infer that a like result would accrue to the shareholders in Hennock Mine.

It was moved by the CHAIRMAN, seconded by Mr. T. A. READWIN, and carried unanimously, that a call of 10s. per share be forthwith declared.—It was moved by the CHAIRMAN, seconded by Mr. W. C. WINTERBOTTOM, and carried unanimously, that Messrs. Ommanney, Sons, and Co., of Charing-cross, be appointed bankers to the company.

A vote of thanks having been awarded to the chairman for his efficient conduct in the chair, the shareholders separated, highly gratified at such unexpected discoveries in the mine.

[Since the above was written, a report has been received from the mine under date Jan. 24, which will be found in our Mining Correspondence.]

SOUTH WHEAL TOLGUS MINING COMPANY.

A meeting of adventurers was held at the mine on Wednesday, the 23d inst., when the accounts were submitted to the meeting, showing—

Balance brought forward		£208 16 11
Ores sold (less dues)	£1630 19 4	
Cost for November	£313 5 8	
Ditto December	387 8 4	
Merchants' bills	216 18 4 —	917 12 4
Profit		713 7 0
Total		£922 3 11

Dividend of 2*l.* p. sh., payable on the 31st inst. 512*l.*—Leaves balance in hand, 410*l.* 3s. 11d.

The captain's report was of the most flattering and encouraging nature. The lode in the 12 fm. level west was producing 2 tons to the fathom, of very good ore; 3 to 4 fathoms could be driven weekly. In the 22 fathom level, the produce was 1 ton per fathom; and the 32 fathom level 1½ ton per fathom.

This being the first dividend declared, the adventurers would not divide the whole of the profit, but have allowed the balance in hand to increase by the surplus profit of 201*l.* 7s. The profit for January and February, from the ores sold last Thursday, is estimated to be 1000*l.*

WEST WHEAL SETON MINING COMPANY.

The usual bi-monthly meeting of shareholders was held at the mine, on the 22d inst., when the following statement of accounts was presented and passed, showing—Tutwork and wages, 522*l.* 18s. 1d.; tributers' balances, 50*l.* 17s. 6d.; merchants' bills, 155*l.* 18s. 3d.—727*l.* 13s. 10d.—By copper ore sold (less dues, 36*l.* 2s. 11d.), 506*l.* 2s.; balance last account, 10*l.* 18s. 6d.: leaving balance against the mine of 118*l.* 13s, 4d.—A call of 1*l.* per share was made.

The following report, from Capt. John Lean, was read to the meeting:—

Jan. 22.—The 50 fm. level is driven south of the engine-shaft 22 fathoms, and north 17 fms. On the lode, or branch, cut in this level, and referred to in the last report, we have opened about 5 fms.; it will average 1 ft. wide, composed of capel, jack, and mundic. The south shaft is sunk 6 fms. under the 55 fm. level; the lode is 5 ft. wide, producing good stones of ore. The lode in the 55 fm. level west is large, composed of mundic and killas; the lode in the same level at least will produce 1½ ton of ore per fm. In the winze sinking under the 45 fathom level west, the lode is 6 feet wide, composed of capel and mundic. The lode in the 45 fm. level west is 3½ ft. wide, producing 3 tons of ore per fathom. The lode in the 30 fm. level west is 4 ft. wide, composed of capel, mundic, and jack. In the 18 fathom level, west of the shaft, we have cut the south wall; the lode is 24 feet wide, composed of capel and mundic. We have resumed driving west on the north part, which is composed of spar and mundic. In the stopes under the 30 fathom level, west of the shaft, the lode is large, and producing 2 tons of ore per fathom.

MINING NOTABILIA.

[EXTRACTS FROM OUR CORRESPONDENCE.]

MINING NEAR TAVISTOCK.—Wheal Crebor is about to be put to work again, and with every prospect of success. It appears that the old company profited from the mine 35,000*l.*, and abandoned her at a shallow depth. The mine can be wrought to any extent with water-power; and the Tavistock Canal passing through the sett, affords every facility for sending off the ore, bringing in materials, &c., at a very small cost. Few mines offer the advantages that Wheal Crebor does.

SOUTH MOLTON CONSOLS.—These mines look remarkably well. A parcel of rich silver-lead ores, estimated from 40 to 50 tons, will be sold this month.

LAMHEROOE.—Orders have been given for an additional 30 men to work underground in the engine and DAVY'S shafts to explore the lode, and to drive north 51 fms. to the Great Wheal Maria lode. The work to be conducted under the superintendence of Mr. Adam Murray, jun., whose late report on the mine and district has given great confidence to the adventurers.

WHEAL BENNY.—At the meeting of the finance committee, held yesterday, at the offices, King-street, Cheapside, a call of 10s. per share was made, and a resolution adopted, that the mine should be vigorously worked, and the Benny lode, just cut, be fully explored, with, it is hoped, favourable results.

WHEAL TRYPHENA.—I was at the mine on Saturday last, and was glad to find that the levels, on the whole, are looking much better.

We have been favoured with the following return of prices obtained for a number of shares, submitted to sale, by auction, on Tuesday last, by Messrs. Bellringer and Richards, at Penzance:—

Shares.	*Mines.*	*Price.*
8-100th	Botallack	£52 0 0
15-160th	Levant	162 0 0
252-672d	Ding-Dong	5 5 0
39-124th	Boswidden	7 10 0
7-40th	Wheal Owles	110 0 0
8-40th	Nanpean and Bolloval	6 5 0
20-120th	Wheal Reeth	55 0 0
8-94th	Balnoon [Bought in at	10 0 0
4-128th	Hawke's Point	12 0 0
2-119th	Great Work Consols	135 0 0
1-98th	Wheal Vor Consols	51 0 0
4-107th	Budnick Consols	10 2 0

MINING IN WALES.—The Lisburne, and other mines in Cardiganshire, whose operations have been much impeded by the severe frost, and which will cause some diminution in the monthly returns, are, we are gratified to learn, again in full operation. The thaw has opened the streams, so that the water-wheels can be used, and the dressing operations are being prosecuted with vigour.

CERRO DEL BOTE MINING COMPANY.—About 23,000*l.* has been subscribed to work this promising mine, a great portion of which has been taken by the old Bolanos shareholders; the subscription lists are about to close. The tendency being to home investments, it is feared that the projectors may not succeed in forming the company with adequate capital to do justice to this hitherto flourishing property.

VALLEY OF LOETCHEN MINING AND SMELTING COMPANY.—The litigation concerning the disputed right to this mine has not yet finally terminated. Great scandal has been caused by the unseemly spectacle of Englishmen proceeding with such virulence against each other in foreign courts of law, and the general feeling is, that it would have redounded much more to the credit of the national character if an equitable compromise had been effected between the contending parties, so that the mines could have been properly worked, and much unpleasantness and useless expense avoided. It is to be hoped that the wholesome lesson will be learned, that Englishmen should not allow themselves to be deceived by inflated reports, or purchase rights in foreign countries, without assuring themselves that the sellers have a legal authority from the State to transfer them.

WHEAL CURTIS.—By order of the Master in Chancery, Brougham, who is charged with the winding-up of the affairs of this company, a call of 7s. 6d. per share has been made on the shareholders.

IMPROVEMENTS IN THE MANUFACTURE OF IRON.

In another part of this Journal, we give full particulars of a recent addition to the list of patented inventions for improving the manufacture of iron, which, it will be seen, emanates from a gentleman who is partner with a son of the Bishop of Exeter, in extensive mines near Dudley, and is well known to the trade as a first-rate practical miner. It will be quite unnecessary for us to speak the praises of this improvement, as our readers have the whole matter before them; but we would just direct their attention to the fact that the improvement invented and patented by Mr. Plant, although it lies in a small compass, is, nevertheless, to all appearance, based upon scientific principles—the main feature of the invention being the application of steam, conjointly with hot or cold-blast, into the puddling and preparatory chambers of the puddling-furnace, and, by these improvements, to regulate the heat in the puddling chamber.

We have been informed that this invention has been tried by parties of high standing in the iron trade, who have reported in favour of its practical value, stating it to be "the means of saving fuel, and making the quality of iron better." Mr. Plant, it appears, does not intend to work the invention himself, but proposes to throw it open to the trade, by the adoption of the licensing system; so that all may avail themselves of its benefits who will.

WINDING-UP OF RAILWAY AND JOINT-STOCK COMPANIES.—It is announced that a Committee of Inquiry is to be moved for early in the ensuing session by Mr. Young, M.P., and Mr. Parker, M.P., to inquire into the general working of the Joint-Stock Companies' Winding-up Act, as carried out by the Masters in Chancery.

RAILWAY BILLS ON STANDING ORDERS.—Yesterday, in pursuance of the Speaker's order, the examiners commenced their sittings in committee-room 19 of the House of Commons, when the standing orders were declared to be complied with in the case of the Shrewsbury and Hereford Railway, who seek to merge 146 shares, for which scrip was issued, but which have never been claimed, and 4943 forfeited shares in the general capital of the undertaking; also to reduce the capital from 800,000*l.* to 450,000*l.*, 2*l.* per share to be the greatest amount of any call, with power to borrow 150,000*l.* The South Devon Railway, for power to issue new shares not exceeding 625,000*l.*, with regulations for priority of dividends. The West Cornwall Railway, for deviation of line and branch at Hayle. The South Wales Railway, for making a new railway in the forest of Dean. The Waterford and Limerick Railway, for amendment of Acts, and extension of time for purchase of lands. The Londonderry and Coleraine, for completion of railway branch and extension of time. Londonderry and Enniskillen Railway, for extension from Strabane to Oniagh. Manchester, Sheffield, and Lincolnshire Railway, for raising money by loan and shares, in lieu of loan, and alteration of tolls.

BUCKINGHAMSHIRE RAILWAY.—Of the 22 miles 17 are now nearly completed, and it is expected that an engine will soon be able to make its way to Banbury.

LANCASHIRE AND YORKSHIRE RAILWAY.—This company propose, with the sanction of Parliament, to increase their rates for express trains and first-class passengers to 6d. per mile, for second class to 4d., and for third class to 2d. per mile, the Parliamentary, or 1d. per mile class, excepted.

DOUBLE-ACTION SAFETY-VALVE AND WHISTLE.—A most ingenious, effective, and useful invention has been shown us at Messrs. Stonehouse and Co.'s office, in Buchanan-street. It is not so much a safety valve, in itself, as an indicator or warner of danger, and is, therefore, an important addition to the usual mountings of steam-boiler. From the hollow standard of the float pulley, near the boiler, springs a short elbow pipe, the upper orifice of which is a small safety valve; and from the chamber on which it works rises a tube, terminating with a whistle. The valve is held down by a lever and weight, the fulcrum of the lever being a short standard on one side of the valve. But the lever is prolonged backwards also, passing through a slant in the main standard, and terminating in an eye which loosely embraces the float rod. On the valve box there is a second small standard opposite the one forming the fulcrum for the safety valve; and to this second standard is jointed another lever, projecting backwards, and also embracing the float rod. This second lever is likewise jointed to the safety valve rod; but there is no weight on it. On the float rod, and between the eyes of the two levers, a tappet is screwed; so that, when the water gets too low, it presses the lower lever, and when too high, it elevates the upper one; but, in either case, the safety valve is lifted, and the whistle sounded. The same alarum is given when the steam is too strong; so that it acts as a warning in those three cases wherein consist the main danger of explosion. It is, altogether, one of the most efficient, and yet simple, arrangements of a self indicating warning signal we have ever seen; and we are sure that, when known, it will come into general use.—*North British Mail*, Jan. 24.

JOINT-STOCK BANKS.

Shares.	*Companies.*	*Paid.*	*Div. p. cent.*	*Price.*
22,500	Australasia	£40	£3	£72
20,000	British North American	50	6	41
20,000	Colonial	25	5	7¾
20,000	Commercial of London	20	6	22 23½
60,000	London Joint-Stock	10	6	17¼ 18
40,000	London and Westminster	20	6	26
10,000	National Provincial of England	35	5	37
20,000	National of Ireland	22½	6	18½
20,000	Provincial of Ireland	25	8	42½ 43½
10,000	South Australia	22½	—	17¼ 18
20,000	Union of Australia	25	6	29
60,000	Union of London	10	6	12½ 13

LATEST CURRENT PRICES OF METALS.

LONDON, JANUARY 25, 1850.

ENGLISH IRON. *a*	*per ton.*	Tile	£87 10 0
Bar, bolt, & square, London	£5 10—6 6	Old copper *e*	*per lb.* 8½d 9d
Nail rods	6 15 0	Yellow Metal Sheathing	8½d
Hoops	7 15 0—8	FOREIGN COPPER. *f*	
Sheets (singles)	8 15 0	Russian	—
Bars, at Cardiff & Newport	5 7 6—5	ENGLISH LEAD. *g*	
Refined metal, Wales*	3 5—3 10	Pig	*per ton* 17 0 0
Do. anthracite*	3 15 0	Sheet	17 10—18 0
Pigs in Wales	3 5 0	Red lead	18 0 0
Do. do. forge	2 15 0	White ditto	23 0 0
Do., No. 1, Clyde	*net cash* 2 8—2 9	Patent shot	19 0 0
Blewitt's Patent Refined Iron for bars, rails, &c., free on board at Newport*	3 15 0	FOREIGN LEAD. *h*	
		Spanish, in bond	15 0—15 10
Do., do., for tin-plates, boiler plates, &c., ditto	4 10 0	American ditto	—
		ENGLISH TIN. *i*	
Stirling's Patent Toughened Pigs in Wales	—	Block	*per cwt.* 4 5 0
		Bar	4 6 0
Staffordshire bars, at the works	6 0 0	Refined	4 11 0
Pigs, in Staffordshire	3 5 0	FOREIGN TIN *k*	
Rails	5 5—5 7 6	Banca, H. C.	4 7 0
Chairs	4 0 0	Ditto, for Export only	4 5 0
FOREIGN IRON. *b*		Straits	4 5 0
Swedish	11 10—13 10	TIN-PLATES. *l*	
CCND	—	IC Coke	*per box* 1 8 6—1 9
PSI	—	IC Charcoal	1 13—1 14
Gourieff	—	IX ditto	1 19 0
Archangel	—	SPELTER. *m*	
FOREIGN STEEL. *c*		Plates, warehoused	*per ton* 17 5—17 10
Swedish keg	14 15 0	Ditto, to arrive	17 0—17 5
Ditto faggot	15 0 0	ZINC. *n*	
ENGLISH COPPER. *d*		English sheet	*per ton* 21 0—22
Sheets, sheathing, & bolts, *p. lb.*	0 0 10	QUICKSILVER *o*	*per lb.* 4s. 0d.
Tough cake	*per ton* 88 10 0		

Terms.—*a*, 6 months, or 2½ per cent. dis.; *b*, ditto; *c*, ditto; *d*, 6 months, or 3 per cent. dis; *e*, 6 months, or 2½ per cent. dis. *f*, ditto; *g*, ditto; *h*, ditto; *i*, ditto; *k*, net cash; *l*, 6 months, or 3 p. ct. dis.; *m*, net cash; *n*, 3 months, or 1½ p. c. dis.; *o*, ditto, 1½ dis.

* Cold-blast, free on board in Wales.

REMARKS.—During the past week there has been a good demand for all kinds of metals, and prices are firm and well maintained.—Shipping orders received from India and America have produced a favourable effect on the market.—Welsh bar-iron and rails are in good request; large orders for the latter are reported to have been received by the last steamer from the United States.—Scotch pig-iron is without alteration; if any thing, prices are in favour of the seller. We quote mixed Nos. 48s. 6d.; all No. 1, 49s. to 49s. 6d. and No. 1, Gartsherrie, 50s., free on board in Glasgow.—An advance of ½d. per lb. has taken place in English copper.—In other metals no alteration.

GLASGOW, JAN. 24.—A fair business has been done in pig iron during the week. The prices have stiffened a little within the last two days, and to-day may be quoted at 48s. 6d. and 49s. for mixed Nos.—cash.

MANCHESTER, JAN. 22.—There was a good attendance on 'Change of parties connected with the iron trade of this district, and a strong disposition was manifested by the consumers to effect purchases, and though dealers were firm in requiring full prices, the business done has been larger than has been remembered for some time. The feeling amongst the trade, which we have for some time noticed, that higher rates must prevail in the metal market, seems gradually extending itself among their customers; and this opinion, if not in some measure caused, is at least materially strengthened by the impression, which is very general, that the excess of production in Scotland over consumption and export, in the last year, is by no means so serious as was supposed. In a late estimate of the probable yield of the several furnaces in Scotland, and the consequent probable excess of make over export and consumption, it was stated somewhat widely as from 50,000 to 100,000 tons, being aware that there were difficulties in the way of attaining complete accuracy, as some of the most extensive makers had declined to give any return of their production. We have reason to believe that in a short time an authentic statement may be published, from which it will appear that the smaller amount is the more correct, which would reduce the stock held in Dec. by 50,000 tons, which, taking into account the generally improved aspect of commercial affairs, not only in this country, but in America and on the continent of Europe, from whence large orders are daily arriving, is a circumstance likely to give a fresh impetus to speculation. In manufactured iron the business remains in a very satisfactory state. Orders are abundant, and if the makers had not been restrained by the fear of a strike among the Staffordshire workpeople, it is not improbable that prices would rule much higher.

THE IRON TRADE—No. III.

PIG-IRON WORKS AND FURNACES IN SCOTLAND AS AT DEC. 31, 1849.

Works.	*Proprietors.*	*Furnaces.*	*In.*	*Out.*	*Bldg.*
Gartsherrie	Wm. Baird and Co.	16	16	—	—
Dundyvan	John Wilson	9	8	1	—
Clyde	C. Dunlop and Co.	7	6	1	—
Calder	Wm. Dixon	8	5	3	—
Govan	Ditto	6	4	2	—
Monkland	Monkland Iron & Steel Co.	9	9	—	—
Carnbro'	Merry and Cunningham	6	3	3	—
Summerlee	Wilson and Co.	6	6	—	—
Coltness	Coltness Iron Company	6	6	—	—
Langloan	Addie, Miller, and Rankin	6	6	—	—
Carron	Carron Company	5	2	3	—
Muirkirk	Dunlop, Wilson, and Co.	3	1	2	—
Shotts	Shotts Iron Company	4	4	—	—
Glengarnock	Merry and Cunningham	9	9	—	—
Omoa	Robert Stewart	4	4	—	—
Devon	Wilson and Christie	2	1	1	—
Blair	Ayrshire Iron Company	5	—	5	—
Garscube	John Watson	2	—	2	—
Castlehill	Shotts Iron Company	3	2	1	—
Forth	Forth Iron Company	6	4	1	1
Kirkmell	John Wilson	4	4	—	—
Lugar	Ditto	4	4	—	—
Eglinton	Wm. Baird and Co.	4	3	1	—
Dalmellington	Dalmellington Iron Co.	3	3	—	—
Portland	Portland Iron Company	2	2	—	—
Nithsdale	Nithsdale Iron Company	3	—	—	3
Lochgelly	Lochgelly Iron Company	2	1	1	—
Totals		144	113	27	4

Each furnace producing, on an average, 6000 tons per annum; the greater number, however, *actually* putting out *upwards* of 7000 tons.

THE BIRMINGHAM CANAL COMPANY AND THE IRON TRADE.

The first half-yearly meeting of proprietors of the above company was held at their offices, Paradise-street, Birmingham, yesterday—ROBERT SCOTT, Esq., in the chair.—The report set forth that, owing to the depressed state of trade generally during the past year, and to an extraordinary strike which took place amongst the colliers, and which continued two months, the revenue is but little more than that of the preceding year—the amount for the year ending 1848 being the sum of 155,878*l.* 0s. 9d., and for the year ending 1849, 157,714*l.* 19s. 4d.—The CHAIRMAN, with reference to the shares held in the South Staffordshire Railway Company, observed that they were not obliged to keep them, but would part with them when they could obtain a good price. He considered the recent leasing of the line a most monstrous thing. How the shareholders could think of leasing the line to their own servant, Mr. M'Lain, was to him most astonishing. He was glad to be able to announce that the canal was in a most prosperous condition, and their only difficulty would be to find sufficient water to meet the increasing branches and traffic.

PHILIP WILLIAMS, Esq. (one of the most extensive ironmasters in South Staffordshire), in noticing the report, said it was very satisfactory to know that the mining resources of the district were being developed. As fast as the mines were being exhausted in one place, others were being opened, and there was no fear regarding the supply of iron. During the past year pig-iron averaged at from 3*l.* to 3*l.* 5s. per ton—a price which did not remunerate those who worked the mines. The state of the continent, and depression of trade in England, had quite destroyed the demand for railway iron; but he hoped things were now about to take a turn for the better. There were large orders in hand for America, and some reason to expect good orders for railway iron from Russia and Prussia. Nor did he see why they ought not to expect orders from France. At present there was a high prohibitory duty, in France, on iron going in from this country; and, if the principle of free trade, now so much under consideration, was carried out in France with respect to that article, they might look forward to a good demand for railway iron from that country. On the whole, their prospects were better.

A dividend of 2 per cent. having been declared, and thanks given to the chairman, the meeting separated.

A return of the commerce of France in 1848 says:—"Coal constitutes the largest item of the commodities supplied from Belgium. In 1848 we took from that country nearly 12,000,000 of metrical quintals, valued at 26,000,000 frs. Cast-iron figures for 5,500,000 frs." . . . "England pays for our own exports with coal, 9,500,000 frs.; pure copper, 3,500,000 frs.; cast-iron, iron, and steel, nearly 3,000,000 frs."

A BAD LEG OF A VERY DANGEROUS NATURE CURED BY HOLLOWAY'S OINTMENT AND PILLS.—Mrs. Poole, of No. 2, Merxaid-court, Borough, had suffered for a very long period with a dreadful sore leg, which baffled the skill of the most eminent surgeons in private practice, as well as in the hospitals and dispensaries under whose treatment she had been, none of whom, after repeated trials, could effect the least good. The use of Holloway's pills and ointment alone has been the means of curing this extraordinary bad leg, to the wonder and astonishment of all who have seen it, as Mrs. Poole is a person far advanced in years.—Sold by all druggists, and at Professor Holloway's establishment, 244, Strand, London.

Current Prices of Stocks, Shares, & Metals.

STOCK EXCHANGE, Saturday morning Eleven o'clock.

Bank Stock, 7 per Cent., 206 ½
3 per Cent. Reduced Ann., 96¼ ⅜ ½
3 per Cent. Consols Ann., 96¼ ⅜ ⅝ ¼
3½ per Cent. Ann., 98¼ ⅜ ½
Long Annuities, 8⅝
India Stock, 10½ per Cent., 268
3 per Cent. Consols for Acc. 96¼ ⅜ ½ ¼
Excheq. Bills, 1000*l.*, 1¼d. 58 61 pm.

Belgian, 4½ per Cent., 90
Dutch, 2½ per Cent., 55¼ ½
Brazilian, 5 per Cent., 89
Chilian, 6 per Cent., —
Mexican 5 per Cent., ex Coup., 29½ 9
Russian, 5 per Cent., 109½
Spanish, 5 per Cent, 18¼
Ditto 3 per Cent., 36¼ ½

MINES.—Prices in shares continue firm, with a tendency to improve. An increased demand has shown itself, and a fair average amount of business has been transacted.

At Devon Great Consols, the lode in the 70, at Anna Maria, continues to improve east, being now worth 120*l.* per fm. At Anna Maria, a cross-cut driving south has intersected a branch, also worth 120*l.* per fm.

South Tolgus, West Caradon, Wheal Margaret, Carn Brea, and South Basset shares have been in request.

South Basset, we learn, is much improved. Alfred Consols continues improving, the lode in the shaft being worth nearly 50*l.* per fm.

The directors of Devon Great Consols declared, yesterday, a dividend of 5*l.* per share, or 5120*l.*, being for profits resulting from copper ores raised in the months of September and October. After payment of this dividend, there will remain in hand, in cash, ore bills running, and Exchequer Bills, a balance of 18,496*l.* 14s. 8d., applicable to the general purposes of the company.

At the South Tamar meeting, the statement of accounts presented showed a balance of 519*l.* 17s. 1d. in favour of the mine, and estimate of liabilities and assets, the former amounting to 497*l.* 10s. 8d, and the latter to 2342*l.* 16s. 10d. The manager's report will be found in another column, which must prove highly gratifying to all the shareholders.

At the South Wheal Tolgus meeting, held on Wednesday, the statement of accounts showed a balance in favour of the mine of 922*l.* 3s. 11d. A dividend of 2*l.* per share was declared, which, after being paid, will leave a balance in hand of 410*l.* 3s. 11d. The agent's report was most encouraging. The profits for January and February were estimated from the sale of ores to be 1000*l.*

East Tamar meeting was held on the 24th; the financial statement showed a balance of 162*l.* 5s. 7d. in favour of the mine. The liabilities amounted to 1576*l.* 3s. 6d., and the assets to 2738*l.* 0s. 2d.

At the meeting of Wheal Benny adventurers, held on Thursday last, a report, by Mr. A. Murray, jun., was presented, wherein some account of the geology of that district, made so interesting by its proximity to the Devon Great Consols, is treated on, giving some reason for the cause of the failures that have hitherto occurred in the various trials made to discover its richness. We refer to the report, which will be found under the head "Mining Correspondence," as deserving attentive perusal by all concerned in the mines of that district.

At the meeting of the Hennock Mining Company, the statement of accounts showed balance of 17*l.* 18s. 5d. in favour of company; but, to meet the future operations, a call of 10s. per share was made. The report of the agent presented considerable encouragement to the shareholders.

At West Wheal Seton meeting, the statement of accounts showed balance of 118*l.* 13s. 4d. against the mine, and a call of 1*l.* per share was made. The agent's report is highly encouraging, and the present call may, we think, be considered the last.

Shares in the following mines have changed hands since our last:—Devon Great Consols, Treviskey and Barrier, Condurrow, South Basset, Tincroft, Trelawny, Herodsfoot, Alfred Consols, East and South Tamar, Trethevy, Bedford United, Daren, Tregorden, Wheal Margaret, Lelant Consols, East Buller, Levant, South Tolgus, Stray Park, Treleigh Consols, West Wheal Tolgus, Tremayne, Devon and Courtney, &c.

In another column will be found a list of shares sold by auction at Penzance. Levant realised 162*l.*; Great Work, 135*l.*; Wheal Owles, 110*l.*; Wheal Reeth, 55*l.*; Wheal Vor, 51*l.*; and Botallack, 52*l.* The others are not in a profitable position, requiring further outlay to develope their importance. Most of them are tin mines, from the present price of which, and the number of shares in a limited market, we consider average prices were obtained. The mines in this great tin district of Cornwall are comparatively but little known in the London market, the importance of which will, we hope before long, become more appreciated, and business in them much more extensively transacted.

In foreign mines, there have been several transactions in St. John del Rey, Imperial Brazilian, and United Mexican; and business has also been done in Guadalcanal, Santiago, Cobre, and Copiapo shares.

Despatches have been received from the Imperial Brazilian mines to the 13th Nov. The gold returns from Gongo and Bananal, from the 3d to the 12th Nov., amounts to 10 lbs. 2 ozs. 12 dwts., making the total from the 1st July, 80 lbs. 4 ozs. 8 dwts. No improvement of note has taken place since last advice (3d Nov.); the operations, it appears, being chiefly confined to preparations for more effectual and permanent work.

The St. John del Rey Mining Company, late yesterday, received accounts from Morro Velho, dated 8th Nov. last, which continue highly satisfactory, exhibiting a profit for the month of October of 4142*l.* 19s. 1d.—the report of which will be seen in another column of the Journal.

From Linares Mines the usual weekly report represents the workings going on gradually and satisfactory.

Letters have been received from the Worthing Mines, South Australia, in which the agent states, that operations have been commenced by sinking an engine-shaft, and also some surface-work.

Advices have been received from the United Mexican Mines to the 17th Dec., particulars of which will be found in another column. A remittance of $30,000 was intended to have been forwarded about a month from the date of the letters.

The Royal Mail steamer, *Great Western*, arrived on Sunday, the 26th inst., bringing the usual West Indian and Mexican mails, and specie, on freight, amounting to $268,635—$66,613 on account of the Mexican dividends, and the remainder on merchants' account—about 53,727*l.* sterling.

HULL, THURSDAY.—The share market has been in a more healthy state since our last. The report of the Brighton Company has given general satisfaction, and we wish other lines were equally well managed. Mr. Hudson's defence will, we think, do him no harm, but whether the shareholders of the "York lines" will consider he has exculpated himself, demands a doubt.

MINING IN INDIA.—The following is extracted from the *Indian News* of the 22d Dec.:—"Dr. M'Clelland visited the copper mines of the Ramghur hills in April last, and found the ore apparently rich. The mines are, however, not worked, as their produce cannot compete in price with imported copper. This is not to be wondered at, when we are informed that the natives, who have heretofore worked them unaided by European skill, smelt with charcoal, although culm is abundant in the neighbourhood. They are also ignorant of the art of blasting stone, and have no mechanical means of removing the water from the mines; or, rather, the pits open to the sky from whence the ore is dug. Had we some intelligent Cornish adventurers here, there can be no question that these mines could be worked to great profit. They are situated about 150 miles from Calcutta, in a lonely, hilly, healthy country. Iron ore is also abundant in the Ramghur district."

ABERDEEN AND LONDON RAILWAY.—The Aberdeen Railway Company have resolved to run a special train from Portlethen for London every Friday afternoon, to reach London on Saturday night, for the convenience of those forwarding perishable merchandise to the London market.

ACCIDENTS—*(Continued).*

Tredegar—Providential Escape.—On Tuesday last, as several men were engaged in sinking a pit for the Tredegar Iron Company, a part of the machinery attached to the steam-engine gave way, and a large beam of considerable weight fell down the shaft, happily passing Mr. Richard Gough, contractor, then descending in the bucket, and falling between two men who were standing near each other at the bottom of the pit, without inflicting the slightest injury. Had this mass of timber falling upon either or all of the persons alluded to, they would have immediately become mangled corpses. The wife of one of the persons thus fortunately spared, having had a dream the night previously, in which she fancied she had seen her husband carried home with two heads, begged of him in the morning that he would not go to work, and cried bitterly when he left.—*Cambrian.*

Balnoon.—As J. Stratten, on Wednesday last, was in the act of descending a ladder in a shaft, he missed his hand, and fell 20 fms. He was taken up shortly afterwards at the bottom of the shaft, and found to be seriously hurt.

Dolcoath.—As J. Bailey, aged 26, was at work here, he fell into the shaft, and was killed.

Swansea.—Rees Richard, aged 63, was found dead in the engine-house, at the Garth Colliery. Deceased was employed to tend the fire of the engine.

Ystalyfera.—A slight explosion of fire-damp took place at the Wern No. 2 level on Monday last, whereby one man had his face and hands slightly burnt.

COAL MARKET, LONDON.

PRICE OF COALS PER TON AT THE CLOSE OF THE MARKET.

MONDAY.—Holywell 21—Townley 20—Wall's-End Hilda 20—Riddell 20 6—Eden Main 22 6—Hetton 22 6—Stewart's 23—Nixon's Merthyr and Cardiff 22.—Ships at market, 20; sold, 10.

WEDNESDAY.—Holywell, 21.—Ships at market, 13; sold, 1.

FRIDAY.—Ships at market, 12; sold, 0—(No quotations).

CURRENT PRICE OF GOLD AND SILVER.

Foreign gold, in bars ....per oz.	£3 17 9	New dollars ..... per oz.	£0 4 10½
" Portugal pieces....	0 0 0	Silver in bars (standard)	0 4 11½

PRICES OF MINING SHARES.

BRITISH MINES.

Shares.	Company.	Paid.	Price.
1000	Abergwessin	9 ..	6
1024	Alfred Consols	8½ ..	15 20
1024	Ashburton United Mines	8½ ..	12
1624	Balleswidden	9 ..	16
128	Balnoon Consols	42½ ..	50
905	Barristown	5½ ..	3 4
3650	Bawden	¼ ..	⅛ ¼
6000	Bealbury	1 ..	1
4000	Bedford	2½ 4½	5 5½
1280	Birch Tor & Vitifer	10½ ..	6½ 7
2500	Black Craig	6 ..	10
8000	Blaenavon	50 ..	10
5000	Blisland Consols	1 ..	4½
1024	Bodmin Consols	5 ..	7
5000	Bodmin Moor Consols	1 ..	3
100	Botallack	182 ..	30
120	Brewer	5 ..	2½
256	Brimpts Tin	2½ ..	2½
10000	British Iron, New, regis.	12 ..	8
—	Ditto ditto, scrip	10 ..	10
2400	Bryn-Arian	2 ..	6 6½
107	Budnick Consols	52½ ..	9
1000	Callington	22 ..	5
1000	Camborne Consols	7 ..	7½
20000	Cameron's Steam Coal	7 ..	1
256	Caradon Mines	22½ ..	10
256	Caradon United	24 ..	5 8
256	Caradon Wh. Hooper	21 ..	4½
000	Carn Brea	15 ..	105
1000	Carthew Consols	1½ ..	7
3114	Charlestown	220 ..	—
500	Combiawn	5½ ..	4½
128	Comfort	45 ..	65 68
256	Condurrow	20 ..	87½ 90
2560	Cook's Kitchen	14 ..	8 8½
1000	Coombe Valley Quarry	5 ..	5
1000	Copper Bottom	1½ ..	6½
900	Court Grange	7 ..	10
212	Craddock Moor	23½ ..	5
128	Creeg Brawa	120 ..	30
500	Cubert Mine	12½ ..	—
1000	Cwm Erfin	3½ ..	1½ 2
1000	Daren	2 ..	2 3
7100	Derwent	8½ ..	5
502	Devon & Courtenay Con.	1½ ..	2½
1024	Devon Great Consols	1 190	195
1000	Dinorwic	2 ..	5
182	Dolcoath	30 ..	17
2860	Drake Walls	5½ ..	3
10000	Durnam County Coal	45 ..	9
3000	Dyngwm	10 ..	15
512	East Alvenney	5½ ..	6
2300	East Birch Tor	3 ..	3
1024	East Buller	1 4¾	4½ 5
112	East Caradon	47 ..	47
2048	East Crowndale	7½ ..	1½
128	East Pool	15 ..	60
9000	East Tamar Consols	½ ..	1½ 1¾
258	East Tolgus	1½ ..	4½
94	East Wheal Crofty	125 ..	65
128	East Wheal Rose	50	580 600
—	East of Scotland Iron Co.	5 ..	1½
123	East Wheal Seton	14 ..	10
1280	Esgair Lloe	2 ..	3
248	Exmoor Wh. Eliza	11 ..	10 12
494	Fowey Consols	40 ..	45
1024	Freidd Llwydd Mines	1½ ..	3½
4000	Gen. Mining Co. for Irel.	1½ ..	1½
2500	Georgia Consols (Tin)	½ ..	½
256	Gonamena	44½ ..	15
128	Goonvrea	4 ..	2
256	Grambler & St. Aubyn	80 ..	6
96	Great Consols	1000 ..	300
512	Gt. Wh. Rough Tor Con.	24½ ..	18 20
6000	Growa Slate Company	5 ..	5
256	hawkmoor	12½ ..	70
6000	Helgnston Down Con.	1½ ..	2
1500	Hennock Silver-Lead	18s ..	5
4500	Hennock Iron & Tin	21s ..	21s
512	Herodsfoot	10 ..	12½ 15
10000	Hibernian	12½ ..	1⅝
1000	Holmbush	22 ..	13
1024	Kingsett and Bedford	1½ ..	3½ 4½
787	Kirkcudbrightshire	8½ ..	3½ 4

BRITISH MINES—*continued.*

Shares.	Company.	Paid.	Price.
2048	Runnaford Coombe Tin	1½ ..	8
9000	South Tamar	¼ ..	3 3½
128	South Caradon	5 ..	200
1100	South Dolcoath	5 ..	¼ 1
256	Sth. Friendsh. Wh. Ann	30 ..	28 30
256	South Molton	7 ..	12 13
300	South Speed	5 ..	5
256	South Tolgus	16 115	20 20
256	South Trelawny	28½ ..	5
2000	South Wales Mining Co.	1 ..	1
128	South Wheal Basset	20½ ..	450
124	South Wh. Frances	160 ..	305
256	South Wh. Josiah	2 ..	3½ 4
1000	South Wh. Maria	2½ ..	1½
10000	Southern & Western, Irish	2½ ..	4
280	Spearne Moor	30 ..	40
94	St. Ives Consols	— ..	80
128	St. Michael Penkivel	5 ..	10½
999	St. Minver Consols	1 ..	6
1000	Stray Park	43 ..	20½ 21
9600	Tamar Consols	3 ..	7½ 8
10240	Tavistock Consols	½ ..	4 ⅝
1024	Tavy Consols	6½ ..	1½
6000	Tincroft	7 ..	13
58	Tokenbury	170 ..	10
240	Tolcarne	8 ..	15
256	Tregorden	3½ ..	7 8
256	Trehane	1½ ..	30 31
5000	Treleigh Consols	6 ..	2½ 3
2000	Tremance	3 ..	—
96	Tresavean	10 ..	95
120	Trethellan	5 ..	21
120	Treviskey and Barrier	130	145 160
512	Trethevy Copper	1 ..	1
1000	Tyllwyd	2 ..	2½
200	United Mines	50 ..	160
256	Wellington Mines	25 ..	15
128	West Buller	10 ..	450
256	West Caradon	20 100	102½
512	West Fowey Consols	40 ..	12
—	West Par Consols	2½ ..	—
2500	West Polgooth	5 ..	5
512	West Providence	9 ..	15 16
200	West Seton	45	185 190
120	West Trethellan	5 ..	5
512	West Wheal Frances	1½ ..	3½
256	West Wh. Friendship	9 ..	8
3845	West Wheal Jewel	12	2½ 2½ 3
256	West Wheal Tolgus	80 ..	6
256	West Wheal Treasury	27½ ..	15
1024	Whiddon Mines	42 ..	2
5200	Wicklow Copper	5	12½ 12⅝
107	Wheal Adams	130 ..	150
1000	Wheal Agar	— ..	6
256	Wheal Albert	10 ..	1
240	Wheal Anderton	28 ..	15 20
128	Wheal Ann	— ..	50½
512	Wheal Anna Maria	7 ..	4
120	Wheal Bal	5½ ..	10
256	Wheal Benny	14½ ..	2
1024	Wheal Bray	11½ ..	10
2324	Wheal Calstock	9 ..	20 25
182	Wheal Elizabeth	9 ..	12 14
256	Wheal Fortescue	15 ..	12 13
100	Wheal Friendly	70 ..	66½
388	Wheal France	27 ..	11 12
100	Wheal Henry	— ..	18
1024	Wheal Lawrence	3¼ ..	3½
112	Wheal Margaret	79 ..	220
512	Wheal Mary Ann	5 ..	32 33
5000	Wheal May	½ ..	⅜ ½
360	Wheal Oak	20½ ..	5
3000	Wheal Peninale	1½ ..	6
210	Wheal Prospect	4 ..	7
120	Wheal Reeth	41 ..	150
128	Wheal Rose	60 ..	3
198	Wheal Seton	107 ..	260
180	Wheal Sisters	30½ ..	5
512	Wheal Sophia	5½ ..	5
128	Wheal Spearne	10 ..	60
128	Wheal St. Ann	30 ..	35
550	Wheal Trescoll	10½ ..	19 20
260	Wheal Trelawny	7½ ..	78 81
256	Wh. Tremaine (St. Ervan)	9½ ..	2½
1024	Wheal Tremayne	9½ ..	7½ 7⅝
267	Wheal Tryphena	40 ..	30
1000	Wheal Vincent	2½ ..	8
128	Wheal Vlow (Perranz.)	1½ ..	1½
184	Wheal Vyvyan	— ..	60

FOREIGN MINES.

5000	Allen Mining Company	14½ ..	2½ 2⅝
15000	Asturian Mining Co.	15 .	2½
20000	Australian	4 ..	5⅝
6000	Barossa Range	1½ ..	1⅝ ¼
3000	Bolanos	100 ..	—
2000	Ditto Scrip	1⅞ ..	—
10000	Brazilian Imperial	23 ..	3 4
12000	Cobre Copper Co.	40 ..	30
10000	Copiapo Mining Co.	14 ..	4 3½
20000	General Mining Ass'n.	20 .	13
4000	Guadalcanal	5 ..	1½ 1⅝
2000	Ditto Preferential	2½ ..	2½ 2⅝
5000	Kinzigthal Mining Ass.	2 ..	1½
5051	Mexican Company	59½ ..	—
20000	Mexican & South Amer.	8 ..	1 1⅛
5000	National Brazilian	30 ..	3½
104000	N. Brit. Australasian	1 ..	⅜
7000	Royal Santiago	10 ..	6½ 6⅝
11000	St. John del Rey	15 ..	14 14½
43174	United Mexican	...Av.	28½ .. 4½ 5⅝
10,000	Worthing (S. A.)	2 ..	2½

*** *We should feel greatly obliged by agents, or others interested, furnishing us with such corrections for our Share List as we may not have received through our usual channels of information—our object being, to present as accurate a list of prices as can be obtained—to procure which, we solicit the aid of correspondents in general.*

RAILWAY TRAFFIC RETURNS.

Names of Railways.	Length. 1850	Length. 1849	Present actual cost.	Price p. share	Div. 1849	Traffic Returns. 1850	Traffic Returns. 1849
Aberdeen	57	16	1,000,547	12⅝	—	£722	£319
Belfast and Ballymena	37½	37½	514,968	18½	5*	378	345
Birkenhead, Lancashire, & Chesh.	19	19	1,088,804	37	5†	688	611
Bolton, Blackburn, & West Yorksh.	14	—	786,384	5½	—	414	274
Bristol and Exeter	85½	75½	2,660,490	64	—	2969	—
Caledonian	160	141	5,149,320	11⅝ 11⅞	3	5667	2887
Chester and Holyhead	100	84	3,358,217	10⅜ 10½	4	1177	1044
Dublin and Drogheda	35½	35½	778,565	27	—	654	669
Dublin and Kingstown	7½	7½	395,915	—	—	479	548
Dundee, Perth, & Aberdeen Junc.	50	47½	844,554	13½	6½	942	972
East Anglian (Lynn to Ely)	91½	67	1,247,446	1½	—	611	680
East Lancashire	70½	24	2,628,519	12⅝ 11½	5	2579	1712
Eastern Counties and Norfolk	322	295	12,027,069	7½	—	13613	12803
Eastern Union	95	50½	1,782,703	4½	—	—	1140
Edinburgh and Glasgow	57½	52½	2,923,199	27½	6	2451	2929
Edinburgh and Northern	78	34	2,241,276	10½	2	1940	1858
Glasgow, Paisley, and Ayr	104	74	2,574,330	52	3	2609	2538
Glasgow, Paisley, & Greenock	23	23	852,846	19⅝	2	833	770
Gt. Northern & East Lincolnshire	143	—	5,138,756	7 6½	5†	2613	1628
Gt. Southern & Western, Ireland	188½	110½	3,552,589	29⅝ 29½	6†	3629	2937
Great Western	230½	206½	14,867,042	68 69	6½	12753	17213
Lancaster and Carlisle	90	70	1,476,102	52½	4½	3164	1814
Lancashire and Yorkshire	220	127½	10,063,862	57½	5½	10609	9856
Liverpool, Crosby, & Southport	13	—	84,435	4⅛	—	66	61
London and North Western	478	428	26,251,635	118½	7	37473	36531
London and Blackwall	5½	4	1,299,675	3⅜ 3⅝	1-12	536	614
London, Brighton, & South Coast	170	162½	6,502,600	84⅛ 84⅝	2½	5776	5943
London and South-Western	221	194	7,874,259	68½ 69½	5½	7148	7782
Londonderry and Enniskillen	14½	14½	185,739	16	—	114	—
Manchester, Sheffield, & Lincolnsh.	157½	94½	6,598,260	19½	5	4005	2725
Midland Company	483	423½	15,133,779	44¼ 44	5½†	18449	19608
Midland Great Western (Irish)	50	36½	725,332	25¾	4†	927	943
Monklands	36	—	486,245	—	6	—	—
North British	135	83	3,649,055	11⅞ 11¾	4½	2992	2127
Scottish Central	45½	—	1,364,228	15⅜ 15½	7	1155	792
Shrewsbury and Chester	48	23	969,618	13	5	1226	1309
Shropshire Union	30	—	—	3½	—	388	—
South Devon	57½	29	1,909,232	5	5	1315	1176
South-Eastern	189½	165½	8,666,007	20⅝ 19½	5½	7731	6559
Taff Vale	38	40	879,110	—	7½	1436	1854
Ulster	36	36	723,829	45⅞	—	731	686
Waterford and Limerick	23	—	512,894	—	—	—	—
West Cornwall	13	—	—	—	—	287	270
Whitehaven Junction	12	12	150,879	9¼	3	162	168
York, Newcastle, & Berwick	290½	242½	6,827,849	16½ 16¾	7	11343	11769
York and North Midland	260	234	4,983,618	18⅝	7	5537	6341

THAMES TUNNEL COMPANY

The number of passengers who passed through the Tunnel in the week ending Jan. 19, was—No. of passengers, 23,119.—Amount of money, £96 6s. 7d.

SALE OF ORES

To the Sheffield Smelting Company.

43½ cwts. of Concentrated Mineral, containing gold and silver, at .....£480 per ton.

SILVER-LEAD ORE

Sold at the Mine, on the 17th of January.

Mine.	Tons.	Price.	Purchasers.
Court Grange (Penycefn)	16	£14 3 0	Walker, Parker, & Co.

LEAD ORES.

TICKETINGS FOR ABOUT 100 TONS (20 CWTS.) NEWTONARDS LEAD ORE.

Douglas, Isle of Man, January 19.

Bidders.	Price per Ton.
Newton, Keates, and Co. (purchasers)	£10 5 0
Combmartin and North Devon Smelting Company	9 15 0
Sims, Willyams, Nevill, and Co.	9 19 6
Walker, Parker, and Co.	10 1 0
Thomas Somers	10 4 6

TICKETINGS FOR ABOUT 100 TONS (20 CWTS.) LAXEY LEAD ORE.

Douglas, Isle of Man, January 19.

Bidders.	Price per Ton.
Walker, Parker, and Co. (purchasers)	£20 18 6
Mather and Co.	20 14 0
J. T. Treffry	20 13 6
Sims, Willyams, and Co.	20 5 6
Pontifex and Wood	20 2 6
Thomas Somers	19 12 6
Tamar Smelting Company	19 10 6
Newton, Keates, and Co.	19 10 6
Combmartin Company	19 6 6

Sold at Aberystwith, on the 21st January.

Mine.	Tons.	Price per Ton.	Purchaser.
Frongoch	112½	£10 15 6	Sims, Willyams, & Co.
ditto	37½	10 15 6	Panther Smelting Co.
Bog	20	10 10 6	Sims, Williams, & Co.
Nanteos	50	10 4 6	ditto

Tickelings at the King's Head Hotel, Holywell, January 24.

Pen-yr-henblas	42	£10 18 6	Walker, Parker, & Co.
ditto	42	11 1 0	Mather & Co.
Westminster	45	10 6 0	Walker, Parker, & Co.
Jamaica	50	10 3 6	ditto
Belgrave	30	10 17 6	ditto
Maesysafn	17	10 18 0	Mather & Co.
ditto	17	10 18 0	Newton, Keates, & Co.
ditto	16	10 18 0	Walker, Parker, & Co.
ditto	25	11 1 0	ditto
ditto	25	11 1 0	Mather & Co.
Milwr	20	12 7 6	Walker, Parker, & Co.
Pantyffrith	30	13 0 0	ditto
Arkansas	3	21 0 0	ditto
Shallee	37	16 3 6	ditto
ditto	2½	11 0 0	ditto
Port Madoc	13	10 10 6	Newton, Keates, & Co.

Total tons..... 414½.

Sold at the Mine.

Wheal Mary Ann	74	£17 8 6	Sims, Willyams, & Co.
East Wheal Rose	50	14 2 0	Penpoll Company.
ditto	44	14 0 0	Walker, Parker, & Co.
ditto	40	13 16 6	T. Somers.

COPPER ORES.

Sampled Jan. 9, and Sold at the Royal Hotel, Truro, Jan. 24.

Mines.	Tons.	Price.
Consols Mines	96	£5 5 6
ditto	90	5 7 6
ditto	86	5 7 6
ditto	76	6 13 0
ditto	67	6 5 6
ditto	65	3 5 6
ditto	63	5 14 6
ditto	58	5 8 0
ditto	25	2 13 0
ditto	15	1 9 6
United Mines	83	8 2 0
ditto	82	4 11 6
ditto	77	2 9 6
ditto	59	6 9 6
ditto	55	3 4 0
ditto	54	3 4 0
ditto	52	4 11 6
ditto	48	4 11 6
ditto	40	8 12 0
ditto	31	0 17 0
ditto	24	1 9 0
Treviskey	96	10 5 0
ditto	84	5 10 6
ditto	81	4 17 6
ditto	69	10 6 6
ditto	60	9 14 6
ditto	48	12 7 6
Tresavean	94	2 18 0
ditto	87	4 1 6
ditto	85	3 12 6
ditto	40	3 6 9
ditto	30	2 5 0
ditto	26	2 12 6
ditto	25	1 15 6

Mines.	Tons.	Price.
Par Consols	100	£6 6 0
ditto	67	8 17 6
ditto	55	5 12 6
ditto	37	5 3 0
South Caradon	90	6 8 6
ditto	80	12 6 6
ditto	50	11 0 6
ditto	30	5 19 6
Trethellan	62	4 13 6
ditto	53	1 16 0
ditto	40	2 17 0
ditto	36	4 7 6
ditto	35	2 5 0
South Tolgus	100	10 3 6
ditto	98	10 9 0
ditto	20	5 5 0
Perran St. George	56	6 3 6
ditto	47	4 7 6
ditto	44	2 1 6
ditto	39	4 12 0
ditto	32	3 0 0
Wh. Comfort	75	2 1 6
ditto	45	3 13 6
Treleigh Consols	44	5 6 0
ditto	32	3 16 6
Penpoll Regulus	50	6 5 6
Wh. Ellen	21	7 4 6
ditto	15	7 9 0
ditto	5	2 19 0
East Wh. Rose	27	13 5 6
Wh. Jewel	10	3 14 0
Wh. Unity Wood	6	5 1 6
Pembroke	1	7 14 6

TOTAL PRODUCE.

Consols Mines	641	£3353	7 0	Wh. Comfort	120	£321 0 0
United Mines	605	2831	10 0	Treleigh Consols	76	355 12 0
Treviskey	438	3732	18 0	Penpoll Regulus	50	313 15 0
Tresavean	387	1247	7 6	Wh. Ellen	41	278 4 6
Par Consols	259	1724	11 0	East Wh. Rose	27	358 8 6
South Caradon	250	2294	15 0	Wh. Jewel	10	37 0 0
Trethellan	226	734	12 0	Wh. Unity Wood	6	30 9 0
South Tolgus	218	2146	12 0	Pembroke	1	7 14 6
Perran St. George	218	918	2 6			

Average Standard.....£112 1 0 | Average Produce 7⅝
Average Price per ton £5 15 6
Quantity of Ore .....3573 tons | Quantity of Fine Copper, 272 tons 4 cwts.
Amount of Money £20,685 18 6
LAST SALE.—Average Standard.....£102 2 0.—Average Produce..... 10
Standard of corresponding sale last month, 110*l.* 17s.—Produce, 6⅝.

COMPANIES BY WHOM THE ORES WERE PURCHASED.

	Tons.	Amount.
Mines Royal	487	£3182 15 7
Vivian and Sons	973	4668 13 9
Freeman and Co.	317	1985 13 10
Grenfell and Sons	349	1463 4 6
Sims, Willyams, and Co.	300	1812 9 6
Williams, Foster, and Co.	925	6346 7 6
Schneider and Co.	222	1226 13 10
Total tons	3573	£20,685 18 6

Copper ores for sale on Thursday next, at Andrew's Hotel, Redruth.—Mines and Parcels.—North Pool 530—Wheal Seton 517—Camborne Vean 502—East Wheal Crofty 500—Tincroft 460 South Wheal Basset 380—Fowey Consols 240—Condurrow 208—Dolcoath 196—East Pool 153—South Wheal Frances 141—North Roskear 96—Grambler and St. Aubyn 40—Wheal Mary Consols 33—Copper Bottom 26—Creeg Brawa 18.—4040 tons.

Copper ores for sale on Thursday week, at Andrew's Hotel, Redruth.—Mines and Parcels.—Carn Brea 728—Tywarnhayle 457—Par Consols 253—Levant 200—Wheal Buller 159—West Wheal Treasury 120—Wellington Mines 113—Wheal Mary 101—West Wheal Seton 82—Wheal Agar 44—South Wheal Fortune 40—Wheal Tremayne 35—Alfred Consols 32—Michell's ore 22—Wheal Prosper 18—Trenow Consols 4.—Total, 2408 tons.

COPPER ORES

At SWANSEA, for sale Jan. 31.—Knockmahon 103, ditto 92, ditto 86, ditto 78, ditto 72, ditto 66, ditto 53, ditto 47, ditto 23.—Berehaven 122, ditto 119, ditto 100, ditto 98.—Ballymurtagh 58, ditto 36.—

NOTICES TO CORRESPONDENTS.

*** We must impress upon our correspondents, the necessity of invariably furnishing us with their names and addresses—not that their communications should, consequently, be noticed, but as an earnest to us of their good faith.

COMMUNICATION BETWEEN THE ATLANTIC AND PACIFIC.—We have not seen the map of Central America, published by Mr. Wyld, but presume the geology and drawing of Panama can only have been hastily sketched from the plans of our correspondent, Mr. Evan Hopkins, submitted by him to the Institution of Civil Engineers, to illustrate the reading of a paper on the subject. The most authentic and detailed information was given in a lengthy report, which appeared in the *Mining Journal* on the 27th May and 3d and 10th June, 1848. Further particulars can be readily obtained on application to Mr. Hopkins; W. H. Allen and Co., Leadenhall-street; Mr. Laurie, Fleet-street—indeed, any where, or to any one, rather than to the M.P. for Bodmin, for information or courtesy.

CALIFORNIA—ITS PRODUCE AND PROSPECTS.—In Mr. Hopkins's observations at the Society of Arts, noticed in our Journal last week, some typical errors crept in, which may tend to give a mistaken view of his ideas, we, therefore, give the following corrections:—"He had examined the three great branches of the Andes between Checo and the tributaries of the Amazon, and northward to Panama, and had always found gold in the ferruginous granites; but the detritus of which is the only available part that will pay for working. The spots most prolific were pools and hollows in the ravines, &c. &c. Mr. Hopkins, after entering into the electro-chemical process going on in rocks, the formation of metals, mineral veins, &c., noticed the Morro Velho and Marmato veins, which he represented as enormous fractures, the former in argillaceous schist and the latter in porphyry; and he explained that the auriferous iron pyrites, with which these great veins were filled, was due to the same electro-chemical agent, and that the rocks of each district were impregnated with the same elements, and gave gold by decomposition, &c. In answer to Mr. Walls, he (Mr. H.) said, that silver and other metals were governed by the same chemical laws: but, in consequence of their susceptibility of being mineralised and oxidated, and silver held in solution by the proto-sulphate of iron, they were only found in veins, or cavities, not exposed to the atmosphere," &c.

"H. M." (Sherborne-street, Birmingham).—The article on the importation of cadmium was published in the Journal of 22d Dec. It was allowed to be imported duty free, on account of its great affinity to zinc, and being considered an unmanufactured article. Some quantities of cadmium are manufactured in Silesia and the Saxon localities. Probably the information required could be obtained of Messrs. Knight and Co., Foster-lane, City, who are large importers of cadmium.

"A Shareholder" (City).—We know of a work treating on the Joint-Stock Winding-up Acts, by Mr. E. B. Lovell, of the Middle Temple, but we have not heard of any similar publication by Mr. Pulling—to whom, probably, application had better be addressed.

"W. A." (Brompton).—We are always thankful for corrections for our Share List—come from whom they may. Can our correspondent oblige us, or inform us where, or how, they can be procured?—always recollecting that the authority must be given up, when their correctness is questioned.

"R. W." (Throgmorton-street).—We should recommend you to address the directors, who will not object, on ascertaining the correctness of your information, to have the mine inspected by an independent competent person.

"An Adventurer" (City).—There must be some mistake—the letters never reached us, or the matter would have been attended to.

*** Having experienced considerable difficulty in procuring back Numbers, to complete sets of last year's volume, we hope those of our subscribers who intend binding the present year's Journal will be careful in preserving the Numbers as issued, or in obtaining such extra copies as may be required, as soon after publication as possible. The Title and Index was published on the 29th December, 1849.

*** It is particularly requested that all communications may be addressed—

TO THE EDITOR,
Mining Journal Office,
26, FLEET-STREET, LONDON.

And Post-office orders made payable to Wm. Salmon Mansell, as acting for the proprietors.

THE MINING JOURNAL
Railway and Commercial Gazette.

LONDON, JANUARY 26, 1850.

In our first Number of the current year, we congratulated the mining interest, and our readers in general, with the favourable auspices under which we commenced anew our annual progress, and we are gratified to find that even at so early a period our prognostications have been confirmed to an extent which more than equals our expectations. We certainly anticipated great improvements to arise gradually in all branches of the metal trade; but we did not dare to hope they would advance so rapidly as they have done, which, if continued, will render this one of the most prosperous years of the mining world for a considerable time. The desire for railway speculation has long obscured the mining horizon, the large fortunes, *(no matter how made)*, which have been accumulated in those transactions excited the public mind to a feverish tendency, which led them to neglect the back-bone and sinews of the Empire—her mineral resources—for a bubble which has burst, and plunged thousands in irretrievable ruin. Happily, this era is past, and men have become wiser, and are beginning to turn their attention to that healthy and legitimate trading which has been the foundation of our prosperity, and formed our commercial greatness. The mineral treasure of England is a matter of history, and though subject to great fluctuations, and its dark ages, from the time of the Romans to the present day, has been considered one of the staple branches of industry, and, however temporarily shadowed by more glittering prospects of foreign El Dorados, and home chimeras, has continued to maintain its high position as a legitimate object of native enterprise.

The Cornish mining adventurers have always been most prominent; and though of late years alarmists have endeavoured to frighten them into the belief that the influx of foreign ores would eventually swamp our home mines, experience has shown that such has been but "a cry." The smelting-works established in Australia will shortly be able to absorb their own ores, and much foreign ore is reduced in the Americas and Hamburg—in the latter place already from 5000 to 6000 tons have been smelted—the Danish blockade of the Elbe, during the last and the prior spring, having prevented the arrival of a larger amount for reduction; while the development of new markets in India and elsewhere, and the consequent increased demand for copper, will not fail to compensate for any increased production abroad apprehended to the prejudice of our home mines; at the same time competition among the smelters in England is daily increasing. Within the last few years, several new names have been added. Messrs. SCHNEIDER & Co., B. SMITH, MASON, ELKINGTON & Co., and the "British and Foreign Copper Company," having entered on that lucrative business, we have been assured from undoubted authority that copper ores are now in great demand, and likely to realise a more remunerative price to the miner than has been the case for some period. Copper, which last week rose ½d. per lb., or 4*l.* 10s. per ton, is still further expected to improve; and there is every probability that its price will be so enhanced, that many of the poorer mines, producing ores of a low per centage, will receive a considerable impetus, and be in a position to return profits to their adventurers. The tin market still retains a firm position; and from the high price in Holland, and the small sale of the Dutch East India Company, announced for 1850, our tin miners must indubitably receive the benefit of the improved and still rising market. Lead has not only increased in price here, but likewise in America—sales of common lead having been accomplished in the north of England at 17*l.* per fother; and the same metal has been sold at 17*l.* per ton in London; the market here is brisker than it has been for some years past—there being but few sellers.

The late mineral discoveries of lead ore in Flintshire, on the estates of the Hon. Mr. MOSTYN and Viscount FIELDING, noticed in our Journal of the 5th inst., are about to be prosecuted with great energy; while the mines in South Wales, which have again resumed their operations, previously impeded by the frost, are availing themselves of the favourable state of the trade. A great tendency for some period has been shown towards foreign investments; this is now considerably abated. We could instance promising and encouraging *bonâ fide* adventures abroad, which are unable either to obtain their calls or fresh capital, while our home speculations are being eagerly sought after. The prospects for mining of all kinds are of most a favourable nature, and, if legitimately and honestly carried out, will be of incalculable benefit to both adventurers and miners, conferring, at the same time, great prosperity on the districts in which the workings are situated. We hope that the general good which will be effected by honourable and energetic enterprise will not be damaged by any "bal sellers," or knavish and needy adventurers, who, for the purpose of filling their own pockets, regardless of the evil they do, inflict more injury on mining industry in a month than can be repaired in a series of years. We need but remind our readers of many of the schemes of 1835, and the serious evil they caused to the county of Cornwall.

The assembling of the Imperial Parliament for the dispatch of business, a few days hence, will give a new impulse to the numerous political and social questions which have been entered upon, but not disposed of, in former sessions of Parliament, and which are now in such a state of maturity, as to fit them for final adjudication. It is not our business to tread, however lightly, through that extensive field; there are, however, a few subjects which it was our duty to bring to the notice of the Legislature, and which we shall not fail to press upon it during the sittings of 1850. The question of a large and well-ordered emigration to the colonies of Great Britain—for all of them, more or less, stand in need of a liberal reinforcement from the surplus skilled labour of these islands—is, it appears to us, a subject of first-rate importance, both to them and to us. Following this general subject, very closely in magnitude and importance to us, as a mining people, the particular questions of the ventilation and safe working of mines, the survey and registration of mines, and an Act of Parliament, giving consolidation and unity to the laws affecting mining property, by the removal or the modification of the local, and, in some senses, arbitrary, rules by which, in some districts, property of this description is governed, are tasks which claim the attention of Parliament during the quiet session upon which, is is said, we are entering. We shall take every seasonable opportunity of refreshing the memory, and, if at all in our power, of illuminating the mind of Parliament on these subjects during the progress of the approaching discussions. We continue, as a mining community, in the enjoyment of that satisfactory degree of prosperity, which we have been able, from week to week, to announce to our readers. But although favoured with so auspicious a course of things, we should be wanting in our duty to that great industrial interest with which we have been so long and so intimately connected, if we did not diligently avail ourselves of every opportunity of ministering to the increased comfort, and the enlarged success of all who are connected with it.

ON THE PREVENTION OF ACCIDENTS IN COAL MINES.

Resuming our remarks on the report of the evidence given before the Select Committee of the House of Lords, appointed to inquire into the best means of preventing the dangerous accidents in coal mines, we find that Professor ANSTED, who was the next witness examined, said he had visited the Haswell and Killingworth Collieries shortly after the accidents; that, in the first case, though the cause was not perfectly clear, undoubtedly it had arisen from an explosion of a large quantity of gas. At Killingworth, the explosion could be distinctly traced, being from a smaller quantity of gas given off very quickly, which was called in the north of England a blower, meaning a puff of gas generally coming from a crack or fault, almost invariably producing a communication between two seams of coal. While making his observations, he did not see that there were any obvious improvements which might be introduced in the existing ventilation of those mines, but says—"I may observe that there is one thing which is required to be known with regard to ventilation. I believe there is no distinct knowledge of the extent to which air may be split in a mine. The splitting of the air is a technical name for dividing the current, by which means the air that is made to pass down one shaft, and is conveyed along the main workings for a little way, is part of it allowed to go along the rest of that line of road, while another part is made to branch off to the right or left, as the case may require. Generally, I believe the viewers are not aware of the extent to which the air may be split. There is no doubt that you may multiply the quantity of air put down the shaft many times, probably not less than three or four times, by splitting under certain circumstances. It is well known that if air is carried too far there is great friction; and splitting the air, although one of the most important parts of ventilation, is one upon which, perhaps, there have been the fewest experiments." This witness further stated that in some mines he had observed frequently there was no ventilation; there was always a current of air, but it was constantly changing its direction in mines where there was no artificial ventilation. With regard to the observations by the barometer, the result was, that during a great many accidents, and after their occurrence, there was no change by which the accident could at all be accounted for; sometimes the barometer would rise, and sometimes it would fall, within a few minutes of the time of the accident. The observations he had made were carefully compiled by Mr. THOMAS TAYLOR, and were published in the MINING JOURNAL, March 4th, 1848. With regard to the superintendence of an inspector, Professor ANSTED observes—"It would be his duty to see that the general principles of ventilation were properly carried out, and, perhaps, to suggest improvements." From time to time this might be useful, because, since viewers cannot generally go from one district to another, they do not hear, and do not know, what is done; some of them, no doubt, know better than anybody else; but it is only the large mines that can afford to have a good viewer; some of the smaller are without that kind of superintendence, and they want it much more than the larger ones.

Dr. ARNOTT's opinion is, that the system of ventilation—not only in mines, but in almost all other cases—has been defective, because the quantities of air injected, or extracted, have not been determined and regulated by accurate measure. The question of ventilation in reality was one of comparative quantities or measures—the object being to ensure that in any place there shall always be present that known proportion of atmospheric air which renders any other gas, or aerial matter, such as the breath of man, or coal gas, which, when accumulating beyond certain known proportions, becomes deleterious and dangerous. Thus, it is generally known, that if coal gas accumulates so as to be a fifteenth part of the air in a place, it renders the whole mass of air inflammable, or slightly explosive, as discovered on the approach of a lighted candle; and if before the approach of the candle the proportion of gas be as one to ten of common air, the explosion is as terrible as that of gunpowder. This witness recommended for the ventilation of mines the pump and engine part of an apparatus at present in operation at the Consumption Hospital at Brompton. From a powerful engine of this sort, no limit could be placed to the quantity of air which could be moved; 20,000 or 50,000 cubic feet might be supplied as easily, and with as great a certainty, as 2000 or 4000. He approved much of Mr. GURNEY's plan, but considered that this was superior, as it moves and measures in the required amount of air with a certainty beyond price, and with very little and easy superintendence.

JAMES DARLINGTON, Esq. (proprietor of the Astley Colliery, near Manchester), gave an interesting account of the fire in that colliery (as described in the MINING JOURNAL, April 5, 1849), which was eventually extinguished by the introduction of carbonic acid gas, under the direction of Mr. GURNEY; the gas was applied at 2 o'clock on the Saturday morning, and at 5 the men were all at work. As regards furnace ventilation, he considered this very deficient—"inasmuch as sometimes you want a large current of air passing through the mine; the mine will not do more than a given quantity, because the greater the amount of air which is passed through the mine, the weaker will it be in the furnace. In passing a large current of air through the furnace, it has not time to heat the extra quantity passing through it, and, therefore, the ventilation is injured. This was first pointed out to me by Mr. GURNEY, and I was staggered at so self-evident a fact. It is a thing that ought to suggest itself to every coal proprietor, that the furnace begins to act reversely after a certain point, but it is little observed; if the ventilation is very slow, the furnace is more powerful; and if the ventilation is very great, the furnace is less powerful, because it begins to go back inversely. The less the current of air passed into the furnace, the hotter the column in the shaft; but the greater the quantity of air passed into the furnace, the cooler the column of air in the shaft; and it is merely by the rarefaction of that shaft that we get any ventilation at all." This gentleman did not think, if the Government inspectors were not allowed compulsory powers, that there would be any great jealousy on the part of the coalowners.

GEORGE WHIELDON, Esq., stated, that the discovery of the safety-lamp did not apply to the Warwickshire collieries, as the gas there was carbonic acid; while that in the north was carburetted hydrogen.

The evidence of H. H. VIVIAN, Esq., was principally confined to the question of Government inspection. He thought it would be very desirable that a body of intelligent men should be appointed to report on districts, and, under certain circumstances, give advice to coalowners, to point out defects, and show how these defects could be remedied. To give them any power in the direction of the mines, would be to take the responsibility off the shoulders of those on whom it really ought to rest. The system of Government interference, which he had seen on the continent—at Freyberg, in Saxony, in Silesia, and in Belgium—had tended to check adventure; that regulations which might do in the north country, in many cases, would be impracticable in Staffordshire or Wales.

Messrs. FOURDRINIER were examined respecting their invention for preventing accidents by the breakage of ropes and chains, which has been fully described in the MINING JOURNAL.

W. BRUNTON, Esq., exhibited the model of his apparatus, in operation at Mr. Powell's mine, in Glamorganshire, which was in the form of a revolving drum, of 22 ft. diameter, made of sheet-iron, placed upon an air-course, which communicates with the upcast shaft; a circular wall of masonry, 8 ft. diameter inside, concentric with the drum, reaches to within 2 in. of the lower part of it. The 2-inch space is filled with clay, so tight that, by the revolving of the drum, a considerable rarefaction is produced; there is no leakage worth speaking of; at this part it is turned round, and, in turning, its revolution charges the air through the radial openings with that degree of force which is due to the velocity of it upon the principle of centrifugal force.

Dr. HUTCHINSON produced several tables of the temperature of the air at different explosions, since the year 1800. He proposes that, in order to ensure a proper system of ventilation, the Government should recommend to the viewer: more shafts, and a distinct shaft for return air: avoid brattice shafts; if imperative, use brick instead of planks: keep the shaft free at each extremity; but, if constructed for any particular purpose, let there be some compensating opening: sink shafts from each other, as remote as possible: main drifts for air to be explosion proof: only make communications in main ways where openings are absolutely required: when shafts are close to each other, one a downcast and another an upcast, there should be no weak or vulnerable communication between them: study well the communication about the bottom of such shafts: avoid air-crossings as much as possible, and make them in the solid stone when necessary: they should be out of the reach of boys and candles: deal boards and brick walls are no protection against the transfusion of gases: that strong and invaluable stoppings can be made by "stowing" with large stones, or small coals: weak points in a mine are brattices, stoppings of brick or wood, doors and crossings verging into mainways, or separating air of very dissimilar quality: that coal should not be worked too quickly: that a thermometer and a barometer be considered as instruments connected with the ventilation, when maintained by heat, and at hand for daily observation: that the furnace be so constructed as to bring the air as near the fire as possible: that all the air, particularly in shallow mines, pass over the fire, or be otherwise heated: that access to the furnace room from the fresh air may be as remote as possible: that furnace doors be hung that they cannot stand open without much force: that all doors be hung so as to fall of their own accord: that the furnace man have a means of knowing the relative movement of the air, and that there be a check upon him, that the draught of air has been kept uniform when the mine is "idle:" that printed regulations be circulated among the men, containing recommendations and instruction for safety of life in dangerous times. This witness communicated several important facts with regard to the poisonous qualities of the after-damp on the health of the miners, different remedies to purify the air, and the great desideratum of a perfect system of ventilation, to prevent explosion. The plans of Dr. HUTCHINSON have been laid before Sir G. GREY, and favourably reported on by Sir H. DE LA BECHE.

[To be continued in next week's Mining Journal.]

The late William Reid Clanny, Esq., M.D.

Another man of science has been taken from us: Dr. WILLIAM REID CLANNY expired at his residence, Bishopwearmouth, on Thursday, the 10th inst., at the age of 73. He was a native of the County Down, Ireland. Born of respectable parents, and one of a large family, his education was completed at the Medical Schools in Edinburgh; he served as assistant-surgeon for some time in the royal navy while in the Baltic and North Sea, and in the action off Copenhagen. He subsequently graduated in Edinburgh, and married there Margaret, daughter of Capt. Mitchell, of the Hon. East India Company's service. He then resided and practised for a short time in the City of Durham, and subsequently at Bishopwearmouth, where he has eminently practised as a physician for the long period of forty-five years.

Dr. Clanny was a Fellow of the Royal Society of Edinburgh, Member of the Royal Irish Academy, a Knight Commander of the Order of St. John of Jerusalem, Physician Extraordinary to H.R.H. the late Duke of Sussex, and Consulting Physician to the Sunderland Infirmary. His attainments were of no ordinary character; he has frequently distinguished himself in various branches of philosophy, cultivating more particularly those connected with his own profession. Many of his researches have been communicated to the *Mining Journal*, and other leading publications of the day, and which have brought his name into repute, and gained for him the friendship of many scientific men both at home and abroad.

He was benevolent to the poor, and laboured assiduously in their cause. Situated in the midst of the coal-field, his attention was naturally drawn to the many explosions which had taken place in the mines; his scientific talent and humane feelings were, with others, early enlisted in the cause of preventing these awful calamities. In the year 1813, some philanthropic and scientific gentlemen at Sunderland formed themselves into a society for the prevention of accidents in coal mines, of which the late Sir Ralph Millbank, Bart., was president, and it was before this society in that year that Dr. Clanny exhibited a lamp which, beyond all question, was the first attempt ever made calculated to burn safely in an explosive atmosphere.

In May, 1813, a paper was read before the Royal Society, entitled "On a Steady Light in Coal Mines, by Dr. Reid Clanny," which was soon afterwards published in the *Philosophical Transactions*—the Society of Arts in London awarded their gold medal, and the Royal Humane Society of London also presented him with their silver medal. In the latter part of 1815, Dr. Clanny had the courage to make practical experiments in upwards of 100 acres of explosive air in the Herrington Mill Pit, which were attended with perfect success. This lamp never came into general use, in consequence of its cumbrous form; he devised various modifications in a more portable shape, and up to a very late period he has been working at the production of improved lamps at a great cost of time and money. Sir Humphry Davy, in the year 1815, was invited by Dr. Gray, then rector of Bishopwearmouth, and a prominent member of the society above-mentioned, to visit him, and Dr. Clanny met his distinguished friend, and freely communicated all his views and experiments. Sir Humphry Davy turned his attention to the subject, and in January, 1816, the first Davy lamp was tried at the Hepburn Colliery. Almost simultaneously was invented the lamp of the late Mr. George Stephenson, who afterwards attained eminence in his profession as a civil engineer. There is no intention in this notice to discuss the merits of the lamps of Dr. Clanny with the invention of numerous others; there can be no doubt of the *originality of conception* followed out by the *construction* of the very first safety lamp ever invented; and however the first idea may have been improved by others, his persevering industry has now so perfected the lamp in the form lately constructed by him, as to make it applicable to all the purposes of mining, whether we regard its safety, brilliancy of light, and portability of form, as to make it eclipse all those of his competitors; he is, therefore, without a rival in the originality of its conception, and is equally prominent in improving that instrument, to make it the most perfect of its kind. A few friends, headed by the Marquis of Londonderry, the largest coal owner in the north of England, aware of these facts, lately presented him with a piece of plate, as an acknowledgment for his eminent services in the cause of humanity and science.

Peace be with the ashes of him who has conferred so great a boon on his fellow-creatures, which has contributed, without doubt, to save many a poor miner from a premature and violent death.

The remains of the worthy doctor were, on Thursday, January 17th, attended to the New Cemetery, Bishopwearmouth, by the leading members of the Literary and Philosophical Society (of which he may be said to be the founder, and was one of its vice-presidents), by a numerous body of Freemasons, and by a large concourse of the principal persons in the town and neighbourhood, all anxious to pay this last tribute of respect to the memory of one endeared to them by time and goodness of heart.

We regret to inform our readers, that Mr. John Howard Kyan, the well-known inventor of the process for preserving timber from dry-rot, expired at New York, on the 5th inst., at the age of 75.

THE ORIENTAL INLAND STEAM COMPANY.

A detailed statement has just been issued, containing the objects and prospects of the above company, which proposes the establishment of a line of steamers upon the navigable rivers of India, extending, with their branches, over this great continent—the principal feature being the introducing more extensively of our British manufactures, and receiving the valuable productions of India with greater facility and cheapness. The shallowness of the rivers in the dry season, and the present imperfect mode of transit which is adopted, has hitherto precluded free access to the more important districts of this country. The difficulties which have stood in the way of carrying our commercial intercourse into complete effect is likely to be overcome by the enterprising spirit of the present company. The names of the gentlemen comprising the committees of management afford a sufficient guarantee for the effectual carrying out of this important undertaking, whilst their practical experience in similar undertakings is such as to secure confidence in the anticipations of a profitable result. In our next we purpose entering more fully into this subject, which has been already briefly referred to in our pages.

EXPERIMENTS ON THE EXTRACTION OF GOLD AND SILVER FROM THEIR ORES BY THE WET WAY.

BY JOHN PERCY, M.D., F.R.S.*

Attention has of late been directed to the extraction of silver by the wet way from many of its ores, of which large quantities are now imported into this country, especially from South America. Several processes have been projected; and one, the subject of a patent, is now extensively practised. It consists in calcining the ore with chloride of sodium, precisely as in the amalgamation process of Freiberg, and then dissolving out the chloride of silver formed during the calcination by a hot saturated solution of chloride of sodium. From this solution the silver is precipitated by metallic copper, and then cupelled. I have examined many South American silver ores, and have found them very variable in respect to the proportion of silver, and the presence of gold and other metals. In one ore I have found as much as 30½ per cent. of fine silver. Several smelting establishments have, I know, attempted to work some of these ores in the dry way, but the results have not been favourable. Hence will appear the importance of directing attention to the economic extraction of the silver by the wet way. The ore which I subjected to experiment was an auriferous silver ore, which contained a large proportion of blende, with galena, iron pyrites and copper pyrites in small quantity; the non-metallic part of it consisted chiefly of silica. The silver was present as sulphuret. By roasting, the ore swelled up much, and sulphurous acid was copiously disengaged. I received it in the state of coarse brownish-gray powder. I made numerous experiments upon it, to ascertain the best mode of extracting the precious metals by the dry way, and then proceeded with experiments on the extraction of those metals by the wet way, the results of which I now communicate. The mean of two assays of the roasted ore by the dry way gave of fine silver containing gold—7·977 grs. in 1000; 55·839 in the pound avoirdupois; 260 4-8ths ozs. in the ton. The silver contained of gold per cent. 3·78. Therefore, the total quantity of fine silver in 1000 grs. of roasted ore is 7·676, and of fine gold 0·301. Or, 250 6-8ths ozs. fine silver in the ton, and 9 ozs. 16 dwts. fine gold.

1. Ammonia extracted some silver from the roasted ore, notwithstanding the roasting towards the last was effected at a bright red heat.

2. A solution of hyposulphite of soda also extracted from it a very sensible quantity of silver.

3. I digested 100 grs. of roasted ore, for a few hours, with a dilute solution of hyposulphite of soda, containing 150 grs. of the crystallised salt. The digestion was made at a temperature just warm to the hand. I filtered, washed well, added to the filtrate an excess of dilute sulphuric acid, and then boiled. Almost immediately after the addition of the sulphuric acid, sulphurous acid was evolved, and sulphur deposited; but, until the solution became hot, it did not acquire a dark colour. I boiled for some time, stirring constantly, until the supernatant liquor became bright, and the dark precipitate subsided. I filtered, washed well, and dried. I enclosed this precipitate in a sheet of assay-lead (lead free from silver), and cupelled. I obtained a bead of fine silver, weighing 4·800. An accident occurred in this experiment, which may have caused a slight loss. I treated the bead with nitric acid, and obtained a sensible residue of gold. I parted, with the usual precautions, and melted the residue of gold before the blow-pipe. The bead of fine gold weighed 0·009. The silver, therefore, contained 0·187 per cent. of gold. This result appeared to me to be interesting, as showing that hyposulphite of soda dissolved out a sensible amount of gold from the ore roasted *per se*. Is it pobable that, in the presence of a large excess of other metallic oxides, the gold itself may, at least in a certain proportion, have existed in combination with oxygen? I treated the residual ore a second time with a dilute solution of hyposulphite of soda, and proceeded in the manner just described. I obtained another bead of fine silver, weighing 0·050. Some loss was also again accidentally occasioned in this second determination.

4. Gold-leaf was digested in a solution of hyposulphite of soda, but it did not appear to be in any degree acted upon; neither did silver-leaf appear to be appreciably dissolved by the same menstrum, although the surface, after some time, became tarnished, the solution being freely exposed to the atmosphere. A piece of copper wire, which had been previously dipped in nitric acid and washed, was immersed in the solution of hyposulphite containing the silver-leaf; but there was not the slightest appearance of the deposition of silver. However, the surface of the copper acquired a dark colour, and, by subsequent exposure to the atmosphere, became beautifully iridescent.

5. Into a large stoppered bottle I put 1000 grains of the roasted, finely pounded, and sifted ore. I then nearly filled the bottle with distilled water, and passed a stream of clorine through for an hour, having previously added 50 grs. of chloride of potassium, with a view to form a stable double salt of gold. After shaking the bottle at intervals during the passage of the gas, there was a manifest absorption of the gas, as proved by the rushing in of the air on withdrawing the stopper. The agitation was repeated several times, and with the same effect. I left the whole for about four days, shaking at intervals. When the powder had subsided after shaking, o uniformly observed the disengagement of numerous small bubbles of gas from the ore. On plunging a spill, burning only with a spark, into the neck of the bottle, combustion was evidently increased, the spark burning distinctly brighter. A strong odour of some oxygen compound of chlorine continued to be evolved. I filtered, and obtained a clear and colourless solution, which I reduced considerably by evaporation. During the evaporation, a white scum formed on the surface, and white matter (PbCl) was deposited, which, towards the last, occasioned succussions. To the solution thus reduced, when cold, 100 grs. of hyposulphite of soda were added; but the deposited matter did not appear sensibly to dissolve. I treated the residual ore with a solution of 200 grs. of hyposulphite of soda; I filtered and washed. I mixed the filtrate with the solution previously mentioned, and carefully washed in the precipitate. I added hydrochloric acid, and digested as usual, stirring continually. Sulphurous acid did not appear to be copiously evolved. The precipitate thus obtained was reddish-brown and not black. It was washed on a filter, dried, enclosed in 130 grs. of assay-lead, and cupelled. The bead not being clean, was recupelled. I added 100 grs. of hyposulphite to the filtered solution and boiled, when a dark olive-brown precipitate was thrown down, which was dried, detached from the filter (the same as used in the first filtration) as completely as possible, and heated in a porcelain capsule to expel the free sulphur. A small quantity of black matter remained, which was enclosed in about 80 grs. of assay-lead, and cupelled. When the lead was melted, I put the filter on it and incinerated, and I also added the bead of silver previously obtained, and enclosed in a small piece of assay-lead. I obtained a good bead of fine silver. However, the cupellation was not perfectly satisfactory, as I observed some very minute particles of silver surrounded by black scoria on the sides of the cupel. The bead weighed 5·385 grs. By parting with nitric acid, it yielded of gold 0·100, or 1·87 per cent.

6. One thousand grains of the roasted ore were treated with chlorine, precisely in the manner described in experiment 5, and left during four months. Bubbles of gas continued to be evolved sensibly for a long time; and even at the end of the four months, on stirring the ore, still continued to be disengaged from its surface. The clear supernatant solution was decanted, and the residue treated with a cold solution of 200 grains of hyposulphite of soda; it was left for two or three days, filtered and washed with cold water. I then digested the filtrate on the sand bath with excess of sulphuric acid, until the odour of sulphurous acid ceased to be detected. I washed the precipitate with boiling water, when, after long washing, it still continued to become turbid by the addition of BaCl (from PbCl). The dry precipitate was seen to be mixed with shining, colourless, acicular crystals. I roasted till no odour of sulphurous acid was evolved, and then cupelled the residue with 200 grains of lead. There was evidently a considerable quantity of matter present which would not pass into the cupel. I recupelled the bead with a small additional quantity of lead. I obtained a bead of fine silver, weighing 5·80 grs. On the addition of carbonate of potash to the decanted supernatant liquor, a copiously white precipitate was thrown down.

7. I digested 1000 grs. of the finely-pounded roasted ore with a solution of hyposulphite of soda containing 200 grs. of the salt, at a temperature just warm to the hand, and then filtered. I boiled the filtrate, which became brown. I added to the boiling solution excess of dilute sulphuric acid, and continued to digest for some time at about 212° F., stirring continually. I filtered and dried. I detached the precipitate from the filter, and expelled the excess of sulphur by a gentle heat. I enclosed the residuum in about 100 grs. of assay lead, and cupelled. The bead weighed 0·802 gr. This is a very much smaller quantity than that previously obtained (exp. 3) by treating the roasted ore in the state of coarse powder without *subsequent* trituration, as was practised in the present experiment. Is it probable that by the act of trituration the associated matter present, which existed in so large a proportion, compared with that of silver, may have protected the silver from the action of the hyposulphite?

On adding sulphuretted hydrogen water to the filtrate, after precipitation by sulphuric acid, not the slightest blackness was produced. A precipitate of the pure colour of sulphur, canary-yellow, was produced from the re-action of the sulphuretted hydrogen upon the sulphurous acid remaining in the solution. I transferred the ore, after treatment with the salt of soda, into a glass jar, and passed through a stream of chlorine for nearly an hour, stirred well, and left the jar with its contents covered until the following morning. The odour of chlorine still continued to be strongly evolved. I added chloride of sodium, and digested for several hours on the sand-bath, replacing, from time to time, the water removed by evaporation; the surface became covered with small white crystals. Afterwards I added a solution containing 200 grains of hyposulphite of soda, and digested at a temperature just warm to the hand, stirring well. I filtered and washed, and again treated the residual ore with a further solution of hyposulphite, containing 50 grains of the salt. I then filtered and washed. I mixed the two solutions, and digested as usual with dilute SO^3 in excess, and filtered. On the addition of HS water to the filtrate, the latter became dark-coloured. I then added an excess of HS water until the odour of HS persisted, when, after standing, the filtrate did not again become discoloured. I washed and dried. The filtrate, which was readily detached from the filter without sensible loss, was gently heated in a porcelain capsule to expel the free sulphur. It then weighed 24 grs. I enclosed it, together with the ash of the filter, which was incinerated in the same capsule as used for expelling the free sulphur, in 200 grains of assay lead. The capsule was not stained, and every appreciable trace of matter was removed. By cupellation I obtained a bead weighing 5·005 grs.

(To be concluded in next week's Mining Journal.)

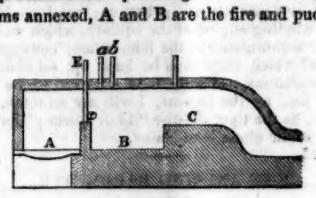
* We extract this able and important paper from the *Philosophical Magazine*, for the present month. It contains a variety of interesting experiments, communicated by the author to the chemical section of the British Association, at Swansea, in 1848, and now first published.

IMPROVEMENTS IN THE MANUFACTURE OF IRON.

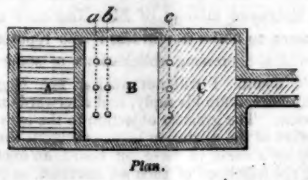
[Abstract of specification of Reuben Plant, of Holly Hall, near Dudley, in the county of Worcester, coalmaster, for improvements in making bar or wrought-iron. Inrolled January, 1850.]

Mr. Plant thus describes this invention:—The object of my said invention is to regulate the heat employed in the manufacture of bar or wrought-iron during the process called "puddling."

In the diagrams annexed, A and B are the fire and puddling chambers



Vertical Section.



Plan.

respectively of the puddling-furnace in general use. D is the bridge between them; C is a preparatary chamber, to receive the metal before it is required in the puddling chamber. The preparatory chamber, C, is open to the puddling chamber, B, without a bridge between them; and the bottom of the preparatory chamber is above the highest stage of the metal in the puddling chamber. E is a damper, which I prefer to be a water or fire-brick damper, to be drawn up or let down, so as to open or shut the communication between the fire and puddling chambers.

The pipes, marked *a*, *b*, *c*, show the position and direction of the holes, pipes, or tuyeres, made or placed in the top of the furnace; *a*, being for the introduction of atmospheric air by hot or cold-blast, and *b* for the introduction of steam into the puddlingchamber; *c*, are like tuyeres for the introduction of steam into the preparatory chamber. I have found two lines of tuyeres across the top of the puddling-furnace, three in each line, and each tuyere 1 inch in diameter—the line nearest the chimney being steam tuyeres, and the other line tuyeres for the blast—sufficient for a puddling-furnace of the ordinary dimensions; and three steam tuyeres of like size, in a line across the top of the furnace, sufficient for the preparatory chamber. These tuyeres respectively may form an angle of about 60° with the top of the puddling-furnace. The blasts and steam jets through their respective tuyeres may be produced in any way most convenient, so long as the blast is about the pressure of 1 lb. and upwards, and the steam about the pressure of 10 lbs. and upwards upon the square inch; but the blast by the tuyeres, *a*, should be introduced at the top of the puddling chamber, just within the bridge, D, of the fire chamber, in a slanting direction, so as to drive the flame as it enters the puddling chamber *down upon the whole surface of the iron*; and the steam by the tuyeres, *b*, should be introduced as near as possible to the same place, so as to fall in like manner at once upon the whole surface of the metal in the puddling chamber; and the steam by the tuyeres, *c*, should be admitted just over the division between the puddling and preparatory chambers, so as to fall in the same manner upon the whole surface of the metal in the preparatory chamber. These tuyeres, *a*, *b*, might be placed obliquely in in the sides of the fire chamber or puddling chamber, or on the top of the furnace nearer its end than the division of the puddling chamber, and the fire chamber and the tuyeres, *c*, obliquely in the sides of the preparatory chamber, so as to drive the flame and steam down upon the surface of the metal in the puddling and preparatory chambers respectively, but not as effectively as in the positions I have chosen.

By these arrangements, or improvements, I can regulate with great nicety the heat in the puddling and preparatory chambers respectively, without the damper usually inserted in the chimney or draught of a puddling-furnace—this damper being a very awkward way of regulating the heat of a puddling chamber, and useless for that object when a preparatory chamber is added.

My invention is used as follows:—The chambers, A and B, are to be charged and tended with fuel and metal respectively in the usual manner, and the blast of the tuyeres, *a*, as well as the usual draught put on. When the metal in B is melted, the blast is to be shut off, and the steam through the tuyeres, *b*, put on until the iron boils. The steam is then to be turned off, and the blast put on until the iron shows itself above the cinder. At this stage of the proceedings, the blast should be shut off, and the metal finished by the ordinary draught in the usual manner, or the heat may be increased or lowered if requisite, as already described. The damper, E, over the bridge, D, is to be raised or dropped from time to time, to aid or check the heat of the puddling chamber as may be needed. I prefer using hot-blast with white and cold-blast with grey iron, though either blast with either iron may be used with advantage. About the time when the iron in the puddling chamber is to be formed into balls, the iron next intended to be puddled should be placed in the preparatory chamber, and kept just below the melting point by the use, from time to time, of the steam from the steam tuyeres, *c*. As soon as the puddler has emptied the puddling chamber of iron, he is to push with his robble the iron from the preparatory chamber into the puddling chamber. The preparatory chamber is then to be replenished with iron at about the time when the iron is ready to be formed into balls in the puddling chamber, as before. The puddler will stir about the metal in the puddling chamber with his robble, and will judge of the heat of the furnace, and of the state of the iron during these several processes, in the same way as under the system now in use.

My invention may be applied to the ordinary puddling furnace without much alteration or expense. I do not claim as my invention the application alone either of blast or steam in the working of an ordinary puddling or other furnace; nor do I confine myself to the details shown and described above, as long as the peculiar character of my improvements be maintained, but I claim as my invention, and as my improvements, in making bar or wrought-iron, the use of hot or cold-blasts with steam jets and hot or cold-blasts with the said damper, E; or with the ordinary damper in the draft of the chimney, to regulate the heat in the said puddling chamber; and I claim the use of hot or cold-blasts and steam jets, and steam jets by themselves, to regulate the heat in the said puddling and preparatory chambers respectively, instead of the said ordinary damper.

Original Correspondence.

ON THE MANUFACTURE OF IRON RAILS.

SIR,—Since my last communication to you, on the subject of the quality and the price of rails, I have been favoured with the perusal of a letter from South Wales, written by a respectable inspector of rails, accompanied with such testimonials of his character, as at once removes all doubt of the correctness of his statements. The correspondence which has appeared in your Journal, from time to time, on the subject of rails, from R. P. Davis, G. B. Thorneycroft, and the "Staffordshire Iron-master," appears to have engaged a good deal of his attention, and, being most desirous that the truth should be told, he remarks—"I should be glad to see the party who are in the habit of putting anything into their rails, but common rubbish of cold-short cinder-iron; I know one large joint-stock works, who, by using this kind of iron for making rails, have to keep two or three blacksmiths continually patching their rails, and from 15 to 20 men to hammer up the fissures and flaws, and afterwards mop them over with sal-ammonia and water, in order to rust the surface, and conceal their glaring defects. I have pieces that have been taken out of the upper surface, or wearing part, of the rail, from ½ inch to 3 inches in length, and that from 12 to 15 men were employed all last summer on the wharf at Newport, tinkering defective rails. That you may the better judge of the way these rails are made, I send you a sketch of a pile, from which the company referred to make their rails:—

PILE FROM WHICH THE RAIL IS MADE.

No. 2		No. 2
No. 2	No. 1	No. 2
No. 1		No. 1
No. 1		No. 1
No. 1		No. 1
No. 1		No. 1
No. 1		No. 1
No. 2	No. 1	No. 2
No. 2		No. 2

Each bar ¾ thick.

Fig. No. 1.

RAIL WHEN FINISHED.

Fig. No. 2.

"From this sketch you will see that the pile is composed of two-thirds No. 1 and one-third No. 2 bars; it is true, after it is rolled into a rail, some part of it may be called No. 3, having gone through three processes; but the whole being made in the first instance from the worst quality of pig-iron, it cannot claim a higher mark than rubbish. What is generally understood by No. 3 iron, is that iron which is made from best mine pig—a mixture of dark and bright gray; nothing short of this can make best No. 3 iron. I have now given you a sample of what is being done by many works in this country; and I imagine this is the description of rail that Mr. Davis is recommending against Mr. Thorneycroft's antilaminating rails."

Now, Sir, after such disclosures, it is not presuming too much to say, that were railway companies to make themselves as well acquainted with these *facts* as I have done, they would, I am sure, find it their interest to purchase Mr. Thorneycroft's rails at a much higher rate than even that at which they are offered; for, judging from the results of the trials which his rails have undergone at the Paddington station, as reported in your Journal some time ago, after the very close examination of Mr. Bowman, there cannot appear a question but that the saving to railway companies, by adopting such a course, would, at least, be cent. per cent. on that single article.

As the parties most deeply interested in these matters may not fully understand the nature of a pile, or its influence on the manufactured article, I think it right to direct their attention to one or two points, quite tangible to ordinary minds. In the first place, the pile is reduced in area of section from *fig.* 1 to *fig.* 2; this, as most are aware, is done in the process of rolling. Again, the pile, when put into the furnace, is about one-fifth the length of that to which it is rolled before it becomes a finished rail; hence, as the sectional areas of the pile, and finished rail, are nearly as 5 to 1, and the length of pile and rail in the same proportion, it will not be difficult to ascertain the thickness of the No. 2 iron on the wearing surface of rail after it is rolled—that thickness will be about one-fifth of ¾ in. Need there be any surprise that lamination takes place on such rails as these? Why, the whole thickness of the only valuable wearing part of the rail (as shown in *fig.* 2) does not much exceed ¼ in., and having little or no solid connection with the other parts of the rail, lamination is the inevitable consequence.

STAFFORDSHIRE IRONMASTER.

Wolverhampton, Jan. 24.

IMPROVEMENTS IN THE LEAD TRADE.

SIR,—It appears there has been an increased quantity of lead ores produced from the mines of Alston Moor in the year 1849, which must be very gratifying to all connected with that important district, as the price, in proportion to the value of pig lead, is at least 20 per cent. more within the last 20 years. Taking the recent sales, and comparing them with those of about that date, there must, of course, either have been great improvements in the manufacture of this article, or the smelter or manufacturer must have realised much larger profits. It would be well if some individual, sufficiently conversant with this matter, would explain it thoroughly, so that the miner could know whether to bestow honour upon the inventor, or cast censure upon the extortioner.

The improved prices of lead ore is a great inducement to open out mines—inasmuch as old workings, as well as new openings, are being prosecuted with that spirit so peculiarly characteristic to the inhabitants of Alston Moor, whose untiring zeal and persevering methods of opening out mines has so often crowned their efforts in the end with a rich mine; while, on the contrary, in case of disappointment, it has only rebounded to a new trial, with the hope of better success.

On the completion of the railway, which is in course of formation, to this hilly district, great facilities are expected in prosecuting the mining operations. Besides lead, large quantities of other ores are expected to be transmitted—such as zinc, iron, &c.—which, in working, will be the means of discovering lead ore, being so often found connected in the same vein, that might have remained hidden for ages.

A MINER.

Jan. 22.

MINING RECORDS—WORKING PLANS, &c.

SIR,—Finding in your Journal of Saturday, the 19th inst., when noticing the article which appeared in the last *Edinburgh Review*, that the erroneous statement contained in that article, as to the disinclination of the mining interest to afford copies of their working maps and sections to this office, is repeated, it is but justice to the many gentlemen engaged in mining, who have contributed old maps, or copies of new plans and sections of their works, to state that there has been no general backwardness expressed on the subject of transmitting such documents to this office. On the contrary, much facility has been afforded, and frequent intimations given, that, upon sending proper parties to the mines, copies of maps and sections might be freely taken, an intimation which has, as far as practicable, been acted on. The Mining Record Office of the establishment is, in a great measure, due to the exertions of some gentlemen of the British Association, at its meeting in 1838—the office being founded in connection with the museum, in 1840—but the representation in the article alluded to, that the Museum of Practical Geology was thus established, is incorrect, since it was formed long anterior to that time—namely, in 1835—and solely in consequence of the representations and suggestions of Sir Henry De la Beche to the Government of the period, by whom they were warmly approved.

ROBERT HUNT,
Keeper of Mining Records.

Mining Record Office, Museum of Practical Geology, Jermyn-street, Jan. 21.

SAFETY FUSE.

SIR,—A great deal has been written about the article, "safety fuse;" but for wet or submarine blasting no person, who is practically acquainted with its use, will dispute its efficiency. Your correspondent, Mr. Eynor, it appears, like many others, does not understand the most approved mode of wet blasting, so as to insure perfect success; for myself I have found no difficulty in firing charges of powder 16 ft. under water, or yet in wet holes

vicinity of water as described by him, and this within the last year at the Plymouth Great Western Docks and other places; but if I permitted unprotected powder to be put in a wet hole, and, coming in contact with the water, it did not explode, I certainly should consider it was blundering on my part, and in nowise attributable to the safety fuse.

But for the information of your correspondent, I will detail the plan I have adopted, and if this system be followed in wet blasting operations, it will, I feel assured, be universally approved. I may here observe, that I have experienced a total failure with the "tape fuse," which is of Messrs. Bickford and Co.'s manufacture; but I cannot say so much of some other descriptions which have been submitted to me for trial; and, after an experience of several months, with from 300 to 400 blasts per day, each blast in wet holes, and under water, I certainly consider myself enabled to speak with some authority on the subject. I have no interest with either party, but am anxious only in this letter to communicate the results of my experience, and to award merit where it is due.

To engineers or contractors who are troubled with wet works, I submit the following method, as one which will prove effectual, and completely obviate the necessity of claying the hole to keep out the water. In preparing my charges, I had some small bags made of strong wrapper cloth, in diameter suited to the size of the holes bored in the rocks, and in length sufficient to contain the quantity of powder requisite, with which they were filled, and the end of the safety fuse inserted, when they were firmly tied up, in which state the charge was immersed in a composition of hot pitch and tar, which renders it impervious to the water. The charge was afterwards suspended in a room for a day or two, until the composition became hard, when it was ready for use; before, however, the charge was put in the hole for blasting, it was rubbed over with grease. When the holes are ready, the charges are inserted with a handful of sand on the top, and afterwards the tamping; the economy in powder with this system will be found something considerable. The cost of preparation, I believe, did not exceed 6d. or 8d. per dozen. This method, I may also add, has been approved of by the Lords of the Admiralty, for the ice-blasting operation (as recommended by me) in the arctic regions, in the expedition under Capt. Collinson, C.B., in search of Sir John Franklin—Messrs. Bickford and Co.'s safety fuse being selected, as best fitted for the purpose.

Fleet-street, Jan. 22. G. SHEPHERD, C.E.

MR. BAGGS'S NEW MODE OF PREVENTING ACCIDENTS IN MINES

SIR,—With the laudable object of diminishing the great and lamentable loss of human life, which is daily occurring in our mines, you have not only powerfully advocated remedial and preventive measures in your leading articles, and given important statistical information, but have also freely admitted into your columns numerous communications from your correspondents having the same object. You have thus been the means of diffusing much valuable information, and exciting an increased and extensive interest in the subject; and it is to your efficient and unremitting exertions that the present movement in favour of legislative interference may, in a great degree, be attributed. For the generous and valuable advocacy of the cause of a class of men who are unable to plead for themselves, or even properly to appreciate your exertions, you are undoubtedly entitled to the gratitude of all who are concerned in mining pursuits, and the thanks of every friend of humanity.

You have exercised a sound discretion by admitting into your columns the suggested improvements of those who are not engaged in mining, or practically acquainted with the details of colliery management. Experience has proved that many of the most important inventions which have ameliorated the condition of the miners, and facilitated their operations, have originated with persons of dissimilar avocations. The late eminent mining engineer, Mr. John Buddle, stated, in his evidence before the Parliamentary Committee of 1835—"He did not think that they (the colliers) are the persons likely to discover any new light; he would rather look to some person of genius or science, *who is not an immediate collier*; and he thinks it is more likely that something might be elicited in that way than by those going on daily in the workings of the mine. The greatest improvements (he says) have been made in most businesses by people not immediately connected with them." It is somewhat unfortunate that similar opinions are not more prevalent among mining engineers, who are too generally more disposed to sneer at and ridicule any amateur attempts at improvements, than to treat them with that proper consideration to which the motives of the authors entitle them, even should the merits of the scheme be more than questionable. For there is undoubted and most melancholy evidence that the existing mode of conducting collieries is sadly deficient in the appliances for the prevention of fatal accidents, notwithstanding the experience, skill, and scientific acquirements that have been brought to bear upon the subject by professional or practical miners. Under such circumstances it is not only politic, but absolutely necessary that other assistance should be invited to, rather than be repelled from, a mutual and hearty co-operation in discovering new means, and suggesting probable improvements on the existing system.

The following remarks on Mr. Baggs's "New Mode of Preventing Accidents in Coal Mines," which appeared in your last Journal, are, therefore, offered in a spirit which fully recognises and appreciates the motives of the talented inventor, although grave doubts are entertained of the practical value of the ingenious apparatus depicted in your columns. In his preliminary observations, Mr. Baggs appears to think that what is most wanted for preventing accidents, is some clear and unequivocal indication of the existence of danger; whereas the desideratum really is the application of some means of superseding this danger altogether, and inducing such a state in the atmosphere of a mine as to preclude the possibility of an explosion. This can only be effected by a thorough ventilation, and any plan which falls short of completely effecting this object will tend but little to advance the safety of the pitmen. But it may be said that it is notorious the collieries are most imperfectly ventilated, and that very many of them are in a dangerous state whenever the wind changes to the south and south-east, accompanied by a fall of mercury in the barometer; wherefore, then, not have recourse to Mr. Baggs's ingenious invention to ascertain the state of the colliery? The answer is, that there are already much more simple, less expensive, and equally certain means of knowing the existence of danger. The flame of a candle, or lamp, gives unmistakeable indications of danger, which, in a great measure, may be ascertained—nay, even predicted—by a careful observation of the barometer and the wind on the surface. It is not from the want of means to ascertain the state of the atmosphere of a mine, so much as it is the disregard with which the warnings are treated, that we must attribute the occurrence of many of the accidents. Aside from these considerations, there are other objections which may be urged against Mr. Baggs's plan. He proposes to erect his machine aboveground, about 50 ft. from the mouth of the upcast shaft, and to draw the air experimented on from the upcast shaft. Now, supposing the works of a colliery to extend a mile in distance from the upcast shaft, and to be at the depth of 150 fms., there is not the least probability that the noise caused by the firing of the cannon can be heard underground, so as to warn the men working, even at these moderate distances, of the existence of danger. Nor would the air taken from the upcast shaft be, in many cases, a fair sample of that which pervades the works, as the return air from them is mixed in the upcast shaft with that from the goaves and wastes, but which is not allowed to traverse through those parts of the colliery where the men are employed.

It may be inferred from Mr. Baggs's remarks, that he imagines the plans of ventilation suggested by Gurney, Struvé, and Brunton, have been generally adopted; and that other precautionary measures of proved efficacy are strictly observed. Were such really the case, the cottages of the colliers would present fewer cases of horrible deaths and mutilations, and the misery and deprivation consequent upon them. These inventions, as well as that no less important one of Mr. Fourdrinier, have only been adopted in one colliery each, and, therefore, the sad fatality which takes place in our mines cannot be so much attributed to the defects of these means as to the non-employment of them, and proves the necessity there is for legislative interference, in order to enforce the use of all available measures to prevent the waste of human life which is now daily occurring.—J. RICHARDSON, C.E.: *Neath, Jan.* 21.

VENTILATION OF MINES—MR. BAGGS'S PROPOSITION.

SIR,—I read Mr. Baggs's communication, in your Journal of last week, with great interest; the idea is certainly very ingenious, but I fear that it will be, like the many other systems emanating from amateur colliery ventilators, open to objections which must consign it to oblivion. Mr. Editor, you are well aware that the present system of working collieries consists of numerous gate-ronds, air-courses, goaves, old and new workings, with a series of trap-doors, bastrices, &c.; these latter are arranged in different parts of the mine, in order to force the current of air through the various workings. Now, Sir, we will suppose a brattice breaks down from pressure, or a trap-door left open, the air then naturally takes the shortest course, and frequently leaving the working part of the mine in an unventilated state. Under these, and other frequent and unavoidable occurences, what indications would Mr. Baggs's proposed plan give of danger at the surface?—as the air which passed through Mr. Baggs's apparatus would be almost, if not altogether, in a pure state; while the workmen would be in the greatest danger. I see no system yet proposed equal to that introduced by your talented correspondent, Mr. Benjamin Gibbons, of Dudley; while I would also mention that Mr. Price Sturvé's system is also worthy of the highest consideration of colliery owners.

Dudley, Jan. 21. AN ENGINEER OF THE NEXT GENERATION.

MR. BAGGS'S NEW MODE OF PREVENTING ACCIDENTS IN MINES.

SIR,—In your valuable Journal of the 19th inst., I observe, in a letter to the editor, a proposal for a "new method of ventilating mines," and the object of my present communication is simply to deny the novelty of such proposition, inasmuch as I have, for nearly 12 months past, advocated the use of galvanism for the ignition of explosive gases in mines. I have another objection against the introduction of the apparatus there proposed—which is, that it is less perfect, more expensive, and infinitely more likely to get out of repair. In conclusion, I have only to say that, for the last *five* months, I have been in communication with her Majesty's Government on the subject of my invention, and that the plans are deposited for examination as to its practicability.

LOUIS JULLION,
Wolverhampton, Staffordshire, Jan. 22. Professor of Chemistry.

VENTILATION OF MINES.

SIR,—I have lately thought of a method whereby I believe the ventilation in coal mines might be very much improved; and, should you oblige me by affording space for a brief description in your Journal, I trust that your clever correspondents will not act by me as they too often do by themselves—pull at each other's coat-tails, when endeavouring to ascend the tree of knowledge; 'tis true, some get shorn of a portion of their broadcloth, and others step on rotten branches; but, after all, I think, if there was less acrimony shown on all sides it would be better—remembering that he who first expresses anger is mostly in the wrong.

My plan is this:—Suppose an upcast pit, 300 yards deep, and 10 ft. diameter: around and parallel with the walls of the pit I would carry a *spiral flue*, that should make a circuit (say) every fathom. This would give an upcast draught of 1500 yards, or more than three-fourths of a mile! I am aware it would be difficult at first to create a current merely from the furnace, or steam jets, at the bottom; but I would attach a small air-pump to the winding engine of the colliery, which would directly exhaust the foul air accumulated in the flue, when, consequently, the rarefied must follow, which may then be kept up, *ad libitum*. Doubtless, there are many objections, and some have occurred to me which I believe may be mooted; but, for the present, I will say no more, lest the *savans* tear me in pieces, as the tiger did the "Lion Queen;" for which tragedy, by the way, the public alone is to blame. N. R. Y.

Wigan, Jan. 23.

THE ANEROID BAROMETER.

SIR,—I have very often blamed the excessive encomiums passed on my invention, and I never have answered the attacks against it; therefore, the violence and interested motives of Mr. Negretti's letter would be a sufficient inducement to notice it, still less if the reputation of your far-spread Journal, and the pressing solicitations of some friends, did not prevent me to be silent. I will not answer Mr. Negretti by another article, which may necessitate his reply, and afterwards mine; but I come at once to the point. The greatest objection to the eyes of my opponent is—"That the effect of the dilatation is so enormous that it will be dangerous for a ship on a coast to have on board an aneroid barometer." Notwithstanding the falsehood of such an assertion, as proved by experience, I propose to Mr. Negretti the following experiment:—1. I will produce an aneroid, and Mr. Negretti the best of *his*, or any other mercury barometer he can find.—2. We will choose three judges amongst the most eminent men in science and character in England.—3. Each of us will deposit in their hands 400*l.* sterling.—4. We will have prepared two chambers, or stoves, heated as nearly as possible, one at 50°, the other at 100° Fahrenheit. When the two barometers should have remained half an hour in one of the chambers, their rising will be noted down, comparatively to a gunge barometer, kept to a constant temperature, or reduced by the usual calculations. Our two barometers will be afterwards put in the other chamber, and the same operation will be performed, and continued alternately, until 12 observations will have been carried; of course I will be present.—5. All the deviations in the course of the instruments, produced by the changes of heat, will be cast together; and to the barometer indicating the smallest number of them, the 800*l.* will be awarded.

I beg of your kindness to insert textually this challenge in your next Number; and if Mr. Negretti will give a plain answer, and state that he accepts the above conditions, I will consider that I am engaged, and will arrive in London within 25 days.—L. VIDIE: *Paris, Jan.* 19.

THE ANEROID AND MERCURIAL BAROMETERS.

SIR,—If Mr. Negretti will but look at his first letter, he will find that it is he who "commences with a very palpable mistake;" for, although he quoted the *comparison* made by Dr. Murray of the two barometers, still he forgets it; it was, however, as follows:—"In sensibility it (the aneroid) far outwits the indications of the common barometer; and on the sea coast, in reference to the presage of the coming storm, the aneroid barometer must prove an invaluable boon;" which comparison is surely to the effect, that the common or mercurial barometer is *inferior* to the aneroid, and that, too, in its most certain and valuable property—viz.: the power of foretelling a storm. Now, it was this alleged superiority in the aneroid, and the experiments of Mr. Negretti, together with his favourable opinion of the sympiesometer, which induced me to make a few remarks.

Dr. Murray, in his last letter, which appears in your Journal of the 19th inst., now adds—"Every one knows the necessity of thermometric corrections in the case of the mountain barometer, and nothing more is wanted in the case of the aneroid." Here I perfectly agree with him, and, moreover, believe that, were M. Vidie's very portable, and I trust useful, instrument as old as M. Conté's aheroid, instead of being an invention of very recent date, the requisite corrections, to make it still more useful, would have been deduced from a countless number of observations; as it must not be forgotten that the principle and construction of the mercurial barometer has been known for upwards of 200 years, though certainly by far the most important improvements have been accomplished within the last half century.

Mr. Negretti also says, in his first letter, that Dr. Murray's "observations may be the results of his having an instrument *called* a barometer;" but he turns round and says, in his next letter, "that Dr. Murray made no special remarks upon the mercurial barometer; at least, no remarks that I should find fault with." Hence, I cannot doubt that, when Mr. Negretti reflects upon his expressions, he will admit them to have been uncalled for, if not intemperate, and as little likely as his experiments to demonstrate the accuracy or inaccuracy of either the one instrument or the other.

January 23. WILLIAM BIRKMYRE.

BAGGS'S HOT-AIR ENGINE.

SIR,—After having for several years endeavoured to arouse attention to the greatly-increased advantages which mankind might, if they would, derive from the steam-engine—having shown how its productive powers might, in a far greater degree, be made to feed the hungry and clothe the naked; to elevate and expand man's intellectual and moral powers; to extend and cheapen the means of travelling, so that intercommunication, with its consequent action of mind upon mind, would evolve a more elevated and universal state of civilisation, dissipating local prejudices and national antipathies, until human intelligence, thus relieved, and thus stimulated, would discover that the best interest of each nation was inevitably dependant upon the advance of the intelligence, prosperity, and happiness of all other nations; and that even individual selfishness would be constrained to discern that the most certain way to obtain the happiness it aims at, would be to advance the intelligence and increase the comforts of all those with whom the happiness of the individual is so intimately connected, as it is by the bonds of nationality. But, in answer to such considerations, I was told, that however certain it may be that the steam-engine was the most powerful agent for realising such ends, yet such arguments would weigh but as a feather in public estimation, as that, bating some little sentimentalism, the public cared not a rush about such things; but that the only argument that would influence the public was that of pounds, shillings, and pence; and that unless I could show, beyond doubt, that they would individually obtain such £ s. d. advantages by the adoption of my invention, it was of little moment how great might be its intrinsic worth; hence, Sir, the origin of the bold announcement of the 20,000,000*l.* which might be saved annually. But I did not make such announcement, without entering into extensive calculations, based upon sound data, which had been confirmed practically to a very great extent by myself and others. These calculations, although they have been three years before the public, have never been disputed; and at the hazard of being still more bold, I will assert, that all that is material in the matter can be proved false, until the laws which regulate matter are changed. But I will go one step further, by saying, whoever will go carefully into the matter, and will investigate the invention, both as to the principles upon which it is based, and into the mechanical arrangements invented and practically worked out in detail, so as to meet the objections of the most fastidious, and the doubts of the most sceptical, as to danger, impracticability, and economy, which some seem so very difficult to be convinced upon, I say, thus the well-informed and candid mind will be brought to the opinion that I have not put forth an exaggerated estimate of the advantages Great Britain might derive from it. In the tables* I have shown that in the marine department, and that, too, only upon steam-vessels containing 100,000 horse-power, the saving would be upwards of 5,000,000*l.* sterling annually. But, after all, though I may not be able to make apparent to your correspondent the means by which such saving is to be effected, I can nevertheless assure him, that the invention is not that meagre affair he would have your readers suppose it is; but that he will find, on further inquiry, that I do not calculate *on* effects, without first being certain that the cause to which I ascribe them, and from which they are to flow, is really equal to their production. I have said, what I am prepared to prove, that if it be not our own fault, steam at 200 lbs. pressure (though I use it only at 100 lbs.) is as safe and docile as on the low pressure system. By way of proof to the contrary, Mr. Baggs addresses himself to the prejudices of your readers by referring to the American system, and cites Mr. Stevenson on the sharp sound produced in the escape pipe, &c.; yet Mr. Baggs must have known very well that, in the system I propose, one of the chief peculiarities is to exhaust the steam of such force as is the cause of this sharp sound, before it is allowed to pass to the escape-pipe. I say he must have known this; for, in the very same letter, and in connection with the 200 lbs. pressure, of which he is here treating, I have coupled the using of it expansively until its pressure be reduced to between 3 and 4 lbs. per square inch. But what has this tissue of words about the American practice to do with the real question in hand, which was, if it had any useful purpose, the disproval of my assertion, that steam can be rendered as safe and docile at 200 lbs. as at 20 lbs? It is a fact which every school-boy ought to know, that the force which tends to rend a boiler asunder is as much dependant upon the number of square inches in the surface which encompasses the sectional area of any part of the boiler, as upon the number of pounds pressure per square inch. Take, then, two boilers—the one cylindrical, and 4 ft. in diameter, and the other tubular, the tubes being 3 inches in diameter, though I use them only 2¼ inches in diameter—and upon comparison with what is falsely called the very safe low-pressure system, with only 6 lbs. upon the inch, there is 900 lbs. rending force; whilst in such boilers as I use, with 100 lbs. pressure, if the tubes were 3 in., we have but 900 lbs., as before, rending force. But how stands the matter as we travel up the scale? If the steam in the low-pressure boiler by chance should even reach 36 lbs. pressure, we have 5·400 lbs. rending force, whilst it may attain 150 lbs. pressure in mine, and yet we have but 1·350 lbs. rending force. Let us go one step further, and notice a pressure, I verily believe, is sometimes produced in such boilers as I have given to the low-pressure system (I say I have given them to the system, because, in practice, the boilers used upon that system are of a much more dangerous kind). Let us suppose that, from some unforeseen cause, the steam should get to 200 lbs. pressure per square inch; the boiler then has to withstand 28·800 lbs. rending force upon this safe low-pressure system, and only 1·800 upon boilers as I construct them. Although this pressure question is one upon which the misleading pander so much to the prejudices of the public, the most dangerous thing connected with steam-boiler explosions they leave entirely out of sight, which is the immense quantity of explosive matter their much-lauded boilers contain, and the instantaneous diffusiveness of its liberation when such boilers burst. Herein lies the true cause of those awful accidents which blow the vessel to atoms, and sends numbers of human beings into eternity before they have time to look round them.

In spite then of all Mr. Baggs has said, or ever can prove, to the contrary, I do know, and others may know, if they will, that no such thing as blowing up a steam-vessel could take place with steam used as I use it; no, not even if it be at 200 lbs. pressure per square inch; but Mr. Baggs would frighten your readers by the awful groans and shocks from such high-pressure steam. I mean not to defend the American practice. There is no one more disapproves of its dangerous and wasteful character than I do; but let us not confound the practical abuse of so useful an agent with the safe, economical, and practical application which it is so easy for us to avail ourselves of, and that, too, with increased safety. There can be no difference of opinion among engineers, or, indeed, any thinking men, that the power must be greater than the resistance if motion is to be produced; now, then, whatever be the power required, we can with as much facility adapt the area of the piston to obtain it by high-pressure steam as by low-pressure steam. If the high-pressure be 200 lbs., and the low 10 lbs., we give to the high-pressure piston an area of 5 in., and the low-pressure piston an area of 100 in.; we have, then, the forces and all the strain upon the machinery standing in the same relation to each other. The only difference thus far is, that the high-pressure engine will be very much less weight and bulk than the low-pressure one, and it will also have less friction. But here starts another most important consideration, which is that, after the same weight of steam used in the small cylinder at 200 lbs. has done as much—nay, more—effective duty through the agency of the 5-inch piston than the 10 lbs. steam, through the agency of the 100-in. piston, the 200 lbs. steam, after it quits the 5-in. piston, still contains nearly six times as much more power, which we may avail ourselves of if we will, instead of generating afresh nearly six times the same quantity as the first, and at nearly six times the expense in fuel. I remind the reader that I am well aware something might be got out of the 10 lbs. steam by expansion; and also that in practice a discount must be made from the full theoretical value I have given to the high-pressure steam by so using it expansively; but I leave my opponents to make the most of these deductions, and pass on to the question of the practicability of so constructing the engine as to carry out such a degree of expansion, and render the engine suitable to the various purposes for which it is required. I have now arrived at a point in this discussion from which emanate different opinions. Some, like Mr. Baggs, assert that it cannot be done; others, again, and they chiefly among engineers, assert it can be done as well in one cylinder as in two; others, again, say it can be done, but that the engine will be of greater weight and bulk for the same power than the present marine engine; whilst I take leave in part to differ from all, I in part agree with all. I agree with Mr. Baggs in the absurdity of placing an 80-in. cylinder in communication with such high-pressure steam; but I differ from Mr. Baggs when he infers that, therefore, it is not practical. I agree with those who assert that all the expansion which takes place in the passages between the two pistons is so much loss upon the two cylinder system; but I differ from them when they infer that, therefore, one cylinder is better than two. I also agree with Messrs. Seaward and Capel in their letter sent in to the Admiralty—[see *Mechanics' Magazine* of December 29]—when they say, "There is no difficulty in making the mechanism of an engine sufficiently strong to sustain the pressure of steam of any elastic force whatever, and if we can succeed in discovering a mode of constructing a commodious steam generator of unquestionable safety, there can be no valid objection whatever to the employment of steam of 40 or 50, or even 100 lbs. pressure for marine purposes; on the contrary, there would be the inducement of a positive economy and considerable convenience in using such steam." But I differ from Messrs. Seaward and Capel when they say the rotary motion is an impediment, and that the engine and boiler would be much greater weight and bulk than the present marine engine and boiler, because I do know it would not be a half—no, nor more than a fourth—the weight and bulk of the present marine engine and boiler. This is a point worthy of a more extensive inquiry than time or space will admit of at present—my business being chiefly to reply to the aspersions directed against me and the invention by Mr. Baggs. I shall, therefore, only remark by the way, that such a boiler as Messrs. Seaward and Capel inform the Admiralty would render high-pressure steam a most desirable thing for marine purposes, really does exist; and that the other difficulties which they seem to think pertain to the expansive action of steam are all practically removed. In the concluding paragraph of Mr. Baggs's letter, he refers to the experience and the facilities which for 10 years I have had. I tell Mr. Baggs frankly, I have had experience, and painful experience, of what it is to be an inventor in the matter of such comprehensive improvements as I have so long laboured to perfect and introduce. As to what I have done with the facilities at my command, I dare again be bold, and assert, that for the outlay incurred, and considering the adverse circumstances against which I have had to contend, he does not find an instance in which so much really original improvement has been added to the steam-engine. Perhaps, against Mr. Baggs has perfected the practical details of the air-engine, and even got it as much into practice as I have got my invention, he will have a clearer conception than any words of mine will give him at present, why it is I have been so long in doing what I have; and I doubt not but his wonder will also cease, and he will understand how it is that judicious and practical men may see such things and fail to recognise and avail themselves of those advantages which the invention possesses. But, in conclusion, I must remind your readers that other inventions, which have proved themselves of undoubted value, have in like manner been rejected. I may point to Watt as an instance in which the public would not accept his invention until they (that is, Bolton and Watt) hit upon the expedient of finding and working the engines at their own cost, and accepting as their remuneration the saving of fuel only. Was it not for the capital this mode requires, it is of all things the one I should most prefer; nor should I care how long the public refused the engines on their own risk, because I know more would be made by such employment of capital than any ordinary trade or speculation can yield.—T. CRADDOCK: *Birmingham, Jan.* 16.

* See Craddock's *Lectures on the Chemistry of the Steam-Engine, &c.* Simpkin, Marshall, and Co., London.

BAGGS'S HOT-AIR ENGINE.

SIR,—If I was "unintelligible" and too "voluminous" in my former letter, in reply to Mr. Baggs, who first misquotes and then misrepresents me, those objections shall not, apply in the present instance. His "one-fourth," which he makes me say, will be found on reference to my letter, to be "1·4;" it should have been 1,4—a "slight mistake," which I should have thought would not have prevented so intelligent an individual as Mr. Baggs, or yourselves, from reading *one and four-tenths*. The same correction applies to one or two other similar mistakes. Again, 15 lbs. per inch for the first half stroke, and a mean of 6 lbs. per inch for the second half, as I allowed, gives a mean of 10,5 (*ten and a half* pounds) for the whole stroke—being 0,105 *above* his own statement, and not a mean of rather under 6 lbs. for the *whole* stroke, as he has misrepresented.

Portland-town, January 25. JOHN WESTON.

AMERICAN ENTERPRISE.—The Great Erie Railroad, extending from the Hudson river to Dundirk, on Lake Erie, is expected to be finished early in 1851. This road is in some respects the greatest work of the age. It has a wide gauge, and is already in successful operation for 277 miles. It is connected by branch railways with the central lakes of New York and the great canal. It is already making the most wondrous changes in that portion of the state through which it passes, as well as adding to the importance of its termini. All this has been mainly done by private enterprise, assisted partially by a credit from the state. The grade, and the massive bridges and viaducts, are all the work of Americans—most of whom, 10 years ago, did not know the difference between a theodolite and a spirit level.

CHRONOMETERS IN SIR JAMES ROSS'S EXPEDITION.—The Arctic expedition lately returned was furnished by the Admiralty with 15 chronometers of various makers, which from the time they left England, until their return, were rated every day by comparison, and registers kept of their performance. These journals have now been received at the Admiralty, and, according to them, eight were employed on board the *Enterprise* and seven on board the *Investigator*. The two selected, after trials on the voyage, as the standards, were Loseby, No. 113, for the *Enterprise*, and No. 119, by the same maker, for the *Investigator*, and it was chiefly by these that the ships were navigated home, as neither the low and variable temperatures to which they were exposed, nor the violent shocks the vessels received from the ice, materially affected their rates; for the longitude, as indicated by them, was found on reaching England to have been given with great accuracy. Both these chronometers were of the mercurial construction, invented by Mr. Loseby, which has proved so successful in the trials at the Observatory, Greenwich, for several years past.

QUALITIES AND MIXTURES OF IRON.

In the evidence before the Strength of Iron Commission—it was stated by Mr. Glynn, that the use of the *hot-blast* in the manufacture of iron does not of itself make iron worse or better; but by its means, materials, otherwise intractable, yielding alloys of iron, may be smelted, instead of ores yielding purer metal: Mr. Morries Stirling has not found any distinct difference between the chemical constituents of hot-blast and cold-blast iron, but apparently there is more carbon in the hot-blast iron, and graphite is more commonly to be seen on the surface of No. 1 hot-blast than on cold-blast iron. Mr. Charles May considers that, by the use of the hot-blast, the quantity of carbon which can be combined with the iron is increased. Mr. Hawkshaw and Mr. Fairbairn consider hot-blast iron weaker than cold-blast; the latter gentleman and Mr. Stephenson state that the use of the hot-blast renders the metal very fluid; and Mr. Glynn says that its use is to produce in large quantities, and at a cheap rate, a soft fluid metal, to be employed in light castings, and that in that respect he considers the invention to be of great public benefit, as enabling Scotch iron-masters to use a new kind of ore, which, though of a weaker character, further experience may enable them to purify and improve. At the same time, the hot-blast is essential for smelting the ironstone from South Wales with anthracite coal, and the metal yielded is of the strongest character, Mr. Glynn and Mr. Stephenson mention that, generally, hot-blast iron is dark grey in colour, and very fine in the crystal; but it appears to be universally agreed that there is no certain method of distinguishing hot-blast from cold-blast iron. Mr. Rastrick states, that the temperature of the hot-blast at the Gartsherrie furnaces was 680° Fahrenheit.

Mr. Stephenson does not attach much importance to the variation in strength of different sorts of iron, but considers that, taking the average of irons generally throughout the country, there is a proximity to a uniform standard. He concludes, from a series of experiments made by him for the High Level Bridge at Newcastle, that hot-blast iron is less certain in its results than cold-blast; that mixtures of cold-blast are more uniform than those of hot-blast; that mixtures of hot and cold-blast give the best results; that simple samples do not run so solid as mixtures; that simple samples sometimes run too hard, and sometimes too soft, for practical purposes. Mr. Rastrick would prefer making girders of forge iron. Mr. Hawkshaw would use the Lowmoor iron. It is, however, generally admitted that mixing irons from different parts of the country produces the best castings, and since the object in mixing them is to obtain the proportion of carbon to iron which gives the greatest strength combined with the required degree of fluidity, the exact proportion will be regulated by the appearance of the fracture of the several irons. Mr. Morries Stirling states that No. 1, hot-blast iron, mixed with No. 3, cold-blast, will give the right proportion of carbon; but that if iron containing that proportion could be obtained at once from the blast-furnace, it would be very superior. Mr. Charles May, however, observes that the strength of cast-iron depends upon the bulk into which it is to be run as well as upon its constituent parts, and that the art of the ironfounder consists in his ability to produce the required amount of strength without any very definite knowledge upon the subject, either chemical or mechanical. Mr. Fox considers a very good mixture for girders to be cold-blast Blaenavon two-thirds, and of hot-blast Scotch two sorts, from the black band and the red hematite ores, one-third. Mr. Grissell considers the use of old scrap-iron to be of immense value, and would use Scotch iron, cold-blast Welsh, and old scrap. Mr. Fairbairn names as the best mixture, independently of price—Lowmoor, No. 3, 30 per cent.; Blaina, or Yorkshire, No. 2, 25; Shropshire, or Derbyshire, N. 3, 25; good old scrap, 20 = 100 per cent.

Mr. Glynn names one-third strong iron from South Wales and two-thirds of the more fluid metal of Yorkshire, Derbyshire, and Shropshire. Mr. C. Fox, Mr. Grissell, and Mr. Charles May, however, all concur in stating that mixtures of iron practically depend very much upon the commercial question of cost, and it is generally admitted that engineers have no guarantee that the mixture for which they may have stipulated in a contract shall be that used by the founder; hence Mr. Fox recommends that engineers in contracting for a number of girders should stipulate that they should not break with less than a certain weight (leaving the mixture to the founder), and cause one more than the required number to be cast; the engineer might then select any one to be broken, and if it broke with a less weight than had been agreed upon, the whole should be rejected. Mr. Glynn considers that the strongest castings are those cast from the air-furnace in dry sand, and that castings in loam are stronger than those in open sand. The metal is more dense and more free from impurity when cast upright. Mr. Fox and Mr. Fairbairn also prefer the air-furnace. With respect to wrought-iron, Mr. Morries Stirling considers the processes adapted in its manufacture as capable of great improvement. Mr. E. Clark states, that wrought-iron from the same maker is not always the same, and though there is not much difference in the ultimate strength of iron, that some qualities extend much more than others before breaking.

CHEMICAL CONSTITUENTS OF IRON.—In his evidence before the Strength of Iron Commission, Mr. Morries Stirling states, that iron in its pure state is malleable, and that it is a combination of carbon with iron which produces cast-iron. In addition to carbon, the cast-iron in this country contains silica, lime, magnesia, alumina, occasionally some of the phosphates and other admixtures; but iron made from magnetic ores is much purer. The strength of cast-iron depends upon its freedom from impurities, and upon the proportion of carbon it contains. The strongest cast-iron contains about 3 per cent. of carbon, or, according to Mr. Charles May, when the carbon is in the smallest proportion that produces fluidity; a larger proportion tends to make the iron soft and weak, and a smaller hard and brittle. Mr. Glynn states, that the strongest iron generally shows a clear grey, or slightly mottled fracture, and he considers that that colour indicates the combination of carbon with iron which produces the greatest strength. Mr. Morries Stirling states, that while colour is admissible as a test of strength, it is not so of chemical constitution, for though dark-coloured iron is usually weak, grey iron usually strong, and white iron usually brittle, yet black iron when chilled becomes white, although it must be supposed to contain the same quantity of carbon; hence, as a general rule, he concludes that colour indicates the treatment to which iron has been subjected, and in some cases only the quantity of carbon. Mr. Charles May coincides in considering the question of strength to be very much reducible to the quantity of carbon contained in the iron, as some of the tenderest iron skilfully treated will produce some of the strongest castings. Mr. Stephenson and Mr. Morries Stirling mention that the fluidity of the Berlin iron is due to the presence of arsenic, and the latter has observed that manganese mixed artificially with cast-iron closes the grain, and is an improvement both to cast-iron and steel. On wrought-iron the effect of manganese is stated to be to give it the hot-short property, whilst cold-short is produced by the presence of a small quantity of phosphorous; and the admixture of arsenic renders wrought-iron hard and brittle.

THE QUICKSILVER MINES.—In the western side of the town, and at the foot of the ridge on which it is situated, is the entrance to the mine. The sargento bore me company as I descended to the gateway, and was as impatient as myself to gratify a laudable curiosity; but for the time it was doomed to be disappointed. No one was permitted to enter without an order from the mining authorities; and that, after some trouble, was obtained, but with the intimation that for that day I was too late, and must present myself the following morning at six, when a sub director would be in attendance to conduct me through the interior. While this important matter was being arranged, I had ample leisure to note how dire were the effects of the mercurial vapour upon those who laboured in the mine. There was not a man that passed me who did not, more or less, bear the marks of its noxious influence. All were characterized by a death-like pallor, from which the youngest and most robust were not exempt. The aspect of these, from the conjunction of their muscular and rounded limbs with the countenances of spectres, was singularly strange. There were others, however, into whom the subtle poison had entered deeper; some were partially paralytic, and walked with a tottering gait; many were affected with a constant tremor, which was distinctly perceptible; and others again had lost either their teeth or an eye, and one or two an arm. * * * Entering the mine by a doorway, over which was placed an image of the Virgin, we passed into a long gallery, at the termination of which the descent commenced. It was by no means perilous, though somewhat fatiguing, and was effected by a series of ladders, furnished with landing places at short distances; one or two galleries were traversed, again descended some dozens of ladders, and at length reached the lowest deeps, where the miners were at work. The depth we had now reached was said to be 900 feet from the surface, and I am inclined to consider this statement as not very wide from the truth, from calculating the numbers and height of the ladders by which we descended. The scene into which we penetrated differed little from those that usually occur in the interior of mines. Men were employed, by the light of feeble lamps, in various processes; some were hammering, others driving bores, working pumps, or conveying the mineral to the bottom of the shaft, from whence it is drawn up to the surface in buckets. The vein of cinnabar upon which they were engaged appeared to be peculiarly rich; from every crevice beads of pure mercury might be seen exuding, and on breaking a fragment, it was found to be studded with minute globules, which were disseminated through the mass, and testified how the larger drops were formed.—*Cities and Wilds of Andalucia.*

MYNYDD KENFIG COLLIERY.—We regret to state that the operations of this colliery are, for the present, entirely suspended, by a great fire underground—the immense mass of coal having ignited. Generally speaking, every kind of work in this neighbourhood is at present dull, with little doing, and many hands are partially, or altogether out of employ. The cessation, however, is temporary, and attributable to the weather. With the breaking up of the frost, we have every reason to suppose that work of all description will be in full activity, and present appearances foreshadow a brisk spring and a thriving summer for the working classes.—*Swansea Herald.*

FRANKLIN COXWORTHY'S DISCOVERIES IN NATURAL PHILOSOPHY.—No. XV.

We have now remaining for examination, with reference to Franklin Coxworthy's discoveries in natural philosophy, but two subjects: the magnetic condition of the earth; and the relative electrical condition of the earth and the air. The former has long engaged the attention of the scientific world; the latter is the result of our discoverer's original investigation. One article will suffice for each, so as to conclude this particular series in the sixteenth.

Treating now, therefore, of the magnetic condition of the earth, we place, as antecedently, the two doctrines in juxta position:—

OLD DOCTRINE.	NEW DOCTRINE.
That the cause of magnetic condition in the earth is to be found in the earth.	That the magnetic condition of the earth is referable to the highly electrical condition of the regions in which the earth revolves.

Notwithstanding that many, possibly all, of our readers may be well acquainted with the construction of magnets, it is necessary that we should to some extent describe it, that our illustration may be the more tangibly impressed upon the mind. If a bundle of steel or iron wire, or a bar of the metal, be surrounded by a copper wire which is enveloped in silk and wax for the purpose of insulating it from the iron or steel, and the ends of the wire be connected with the poles of a galvanic battery, the bundle or bar will become powerfully magnetic; which imparted magnetism will cease the instant the connection with the battery is broken. And it has been found that the same effect is produced if such a bundle or bar be caused to revolve in an electric atmosphere.

Of this last-mentioned fact the scientific world has long been aware; but the more recent discoveries of Mr. Andrew Crosse and Mr. William Henry Weekes, have placed beyond all questioning the highly electrical condition of the surrounding regions—of the space in which this world revolves. These practical philosophers have shown, by the use of numerous electrical points, insulated from the ground, and connected by copper wire with each other, and with the requisite electrical apparatus, that at all times under a cloudless sky, electricity is collected from the surrounding regions, as well as yielded by rain clouds, especially by thunder clouds—the natural electrical apparatus of the atmosphere; but what are termed spent clouds, from which no rain is descending, whether white or black, by intercepting the connection between the points and the surrounding regions from which electricity flows, altogether arrest the action.

As further evidence of what we have now adduced, we may refer to an experiment made by Mr. W. H. Weekes, which cannot possibly be exceeded, either in simplicity of conception and arrangement, or conclusiveness of result. Following up his discoveries in other paths of electrical research (which, for the credit of the present generation, we hope will be appropriately rewarded in his life time), he conceived, that, if he sent up in succession electrical kites, by tying the string of the first to the back of the second, and so on with the series, he might be able to determine the electrical condition of the atmosphere at different altitudes. And so it occurred. His experiments have proved that the atmosphere is electric in proportion to its distance to the earth. Now we have ample evidence that cold, also, increases in intensity in proportion to the altitude attained; and we thus obtain additional testimony to the truth of the identity between electricity and cold.

But it proves more. It is as demonstratively applicable to this paper as to a preceding one, although the precise application of it may in some respects differ. But is it not extraordinary that such an illustration did not suggest the *cause* of the "magnetic condition" of the earth? True enough, electricity having been confounded with heat, presented an insuperable barrier to such a conclusion; and hence, Franklin Coxworthy having satisfactorily reversed the proposition, it was natural that the true cause of the magnetic condition of the globe should suggest itself in his mind. To him it became evident, as it has through him become apparent to us, that the earth, revolving in an electrical region is the grand entity, of which the metallic bar, revolving in an electrical medium, is the illustrative type.

Our readers will recollect that, in Colonel Portlock's work on Geology, the temperature of the earth is assumed to increase in geometrical progression towords the centre, where it is supposed to attain to 450,000°—a calcinative extreme surpassing human attributive conception. Without pledging our belief to the correctness of such a calculation, we may claim a corresponding right of assumption for Franklin Coxworthy, who concludes that the electrical condition of the surrounding regions progresses at a similar ratio with distance from the earth; and that, therefore, at 4000 miles high, the temperature would, correspondingly, be 450,000° below the freezing point. And in this highly electrical state, the revolutions of the earth could not fail of throwing one of its poles into a magnetic condition.

Whether or not the extreme distance of the electrical atmosphere be dependent on the semi-diameter of the earth, is a question for further consideration. It is sufficient for our present purpose, that we have shown that magnetic condition, as well as gravitation, are solely referable to the electrical condition of the surrounding regions.—S.: *Cheltenham Journal.*

WOODEN BOILER.—Our attention has been drawn to the above novelty in mechanics, which, we are informed, is in operation in several parts of the United States. The boiler, which is morticed, is 6 ft. long, 2 ft. wide, and 2 ft. deep. A piece of iron piping, about 4 in. in diameter, is inserted in the box at one extremity, about 1½ in. from the base: this, by means of an elbow, is continued within 1½ in. of the side, so that the interior circuit of the box is made; on the protruding end of the pipe, an elbow is fixed, from which the chimney appears somewhat above the top of the box. Corn cobs, placed in the entrance of the pipe, are used as fuel, and, from the great draught, the water is soon brought to a boiling heat, having free access to the pipes, which are placed on small supports of wood. It has been used in farming purposes for some period, and has been found to combine, at the same time, considerable utility with economy.

ROTARY ENGINES.—Mr. H. G. Thompson, of New York, has patented (Dec. 18, 1849) an improved valve, motion, cut-off, and steam-stops, for rotary engines. Mr. Thompson states his claims as—1. The method of operating the steam-stops, or abutments, by a crank motion derived from the rotation of the piston wheel, substantially, as described, when this is combined with the rotating piston wheel, the form of the periphery of which is such as would be generated by its rotation, and the motion of the steam-stops, substantially, as described, that the steam-stops may always, in their motions, be in contact with the periphery of the piston wheel, and not operated by such periphery, as described.—2. I claim making the ends of the steam-stop with projections, or toes, that embrace the sides of the piston wheel, and extend within the periphery thereof, substantially, as described, when this is combined with the grooves, or recesses, in the packing ring, or any equivalent substitutes therefore, substantially, as described, whereby the steam is prevented from passing from one side to the other of the pistons through the grooves, or recesses, in which the ends of the stop slide, as described.—3. I also claim, in combination with the herein described method of operating the steam-stop, the employment of cut-off valves, operated by eccentrics, or their equivalents, on the crank arbors that operate the steam-stop, substantially, as described.

LOCOMOTIVE POWER.—German papers state that Mr. Gunther, the head of the locomotive factory at Neustadt, near Vienna, has solved the problem relative to the ascent of trains on inclined planes; and built an engine which will draw, with ease, up an incline of 40 to 50°, a train of the weight of 2500 tons.

A NEW DESCRIPTION OF STEAM-VESSEL.—For some days past great excitement has prevailed at Marseilles, by the arrival in that port of an entirely new description of steamer, and which, if successful, will cause a complete revolution in the present plans of building steam-vessels. The vessel is named the *Port de Marseilles*, and was built by a Mr. Lieutieur. It has not the slightest appearance of masts or funnel; in fact, there is nothing to show whether she is propelled by wind, or steam, or oar—she glides through the water as if propelled by some invisible agency. The propelling power is a simple lever.

SOMETHING NEW IN GAS-MAKING.—We are informed that a Mr. Wilkinson, of Grimesthorpe, near Sheffield, has invented a gas-making apparatus, that will produce 9000 cubic feet of gas from one ton of coals, and is so constructed that any steady labourer may manage it with as little trouble as trimming the oil-lamps required to give the same amount of light.—Mr. Wilkinson says, that good gas may be obtained at less than 2s. per 1000 cubic feet.

NEW PENINSULAR STEAM-FLEET.—We understand that, in anticipation of securing the contract for conveying the mails between India and Australia, and of performing the whole of the Mediterranean and Bombay service, the Peninsular and Oriental Company have determined on building seven new and powerful paddle-wheel steam-vessels. Todd and Macgregor, of Scotland, are to build two of the number, they having succeed so well with the *Sultan*, the ship last built. The vessels are to be built of iron.—*United Service Gazette.*

ENGLISH ENTERPRISE IN IRELAND.—The only alleviating feature in the intelligence from this impoverished union relates to the proceedings of Mr. Franklin, an Englishman, who is affording valuable employment in the flag-works at Kilrush—the quarries there, like the resources of the land, having been long neglected by the local proprietary. In the halcyon days of protection, landlords drew large incomes, whilst the wretched peasants barely existed upon potatoes; and husbandry, education, and everything connected with the social condition and improvement of the population were considered unworthy of attention. Respecting these flag quarries, and the laudable enterprise of the Franklin family, the *Limerick and Clare Examiner* has the following interesting statement:—"Mr. Franklin is an Englishman. He is one of nine brothers, every one of whom is engaged in an enterprise, the ramifications of which are widely extended, and are extending more widely every day, through their liberality, energy, and skill. That enterprise embraces establishments in various parts of the world, for the supply of marble in the rough from the quarries, or in a polished and finished state, as it may be required. The Messrs. Franklin work 13 quarries of marble in all, and have several depôts for its preparation and sale. They have one establishment in Galway (the Black Marble-Works, described by Mrs. Hall), and in, and by means of, which from 15,000*l.* to 20,000*l.* have been expended in the immediate locality. How long the Black Marble Quarry would have remained unworked by the landowners is not for us to decide; but the mode in which enterprise may unfold, and find markets for, the products of Ireland is exemplified in the facts, that the marble material for the great staircase in the Duke of Hamilton's mansion, in the English metropolis, has been supplied by Mr. Franklin from the Galway works, at a price of 1700*l.*, and to a marble company of London, who obtained for it, when polished and prepared, the sum of 5000*l.*—that the basement of black marble for the magnificent monument to Napoleon, in Paris, was furnished from Galway; and that as singular an event as sending coals to Newcastle has occurred, in the transmission, by Messrs. Franklin, of marble from Galway to the world-renowned marble region of Carrara itself. The quarry at Kilrush does not yield marble, but it produces large and valuable flags of excellent quality, and adapted to the many public, domestic, and mercantile uses to which they are applied. No later than Monday Mr. Franklin chartered a vessel to take Kilrush flags to New York, and he is about to engage another with a like view. For 10 days he has had nine horses and carts drawing those flags to the waterside, and has given employment in raising and preparing them to the fathers of nearly 300 families."

RAILWAY DEPRECIATION.—A highly-interesting paper on the subject of the railroads has been published by Mr. Allsop, of the Royal Exchange, in which he has reckoned up the depreciation of railway property since its commencement. He has taken 13 of the principal railways, of which the par value of the ordinary capital is 72,644,215*l.* The market value of this stock, on the 9th January, 1849, was 65,887,058*l.*, whilst at the same date this year, it was only 45,828,515*l.*—showing a depreciation of 20,058,543*l.* The par value of the preference capital of the lines is 5,882,200*l.* The market value on the 9th of Jan., 1849, was 6,040,288*l.*, and on the 9th inst. only 4,817,603*l.*—in this case the depreciation is 1,222,685*l.* The total capital represented in the above analysis is 71,526,415*l.*, and the total depreciation amounts to 21,281,227*l.*, or 27½ per cent. on the par value. And yet the lines selected represent not more than a fourth of the sums spent in British railroads. To be sure, the most prosperous lines—as the Great North of England and the Liverpool and Manchester—are not included; in fact, the statement shows the worst features of the case.

GREAT WESTERN RAILWAY—CONTRACTS.—The long-litigated case, M'Intosh *v.* the Company, came before the Lord Chancellor on Monday and Tuesday, when the appeal from the Vice-Chancellor Knight Bruce, who had overruled the demurrer of the defendants, for want of equity, was argued. The bill was filed by David M'Intosh and T. Tyrell, the executors of the late Hugh M'Intosh, the well-known contractor for railway works, against the directors, Mr. Saunders (secretary), and Mr. Brunel (engineer), and it charged fraud on the part of these defendants, and prayed an account and a decree for the payment of what might be found due to the plaintiffs under a contract made between the company and M'Intosh. From the statements in the bill, it appeared that M'Intosh made a contract with the company in the year 1836 to execute three miles of the works of their main line near Ealing. The contract specified that these works were to be finished within a prescribed period, to the satisfaction of the company and their principal engineer, for the sum of 27,950*l.*; and the company further agreed, "to advance money to M'Intosh on account of works done and executed, such execution to be certified by I. K. Brunel, or the principal engineer for the time being of the said company;" and after the completion of the works the remainder of the money was to be paid. There were provisions for the execution of the works in a proper manner, and to the satisfaction of the company, and within a limited time, and there were also stipulations for delays caused by any alterations of the plans on defendants' part. The bill then alleged that the works so contracted for were duly completed within the specified time, and notice of the completion given, and it charged that a sum of 5500*l.* was due to M'Intosh, besides a sum of 2000*l.* retained for other works, and that it was now the duty of Brunel, the engineer, to give his certificate; but it alleged that Brunel, at the desire of the company, had refused to do so, and that he was, therefore, acting in collusion with the directors and secretary to defraud the plaintiffs. To this bill the directors, Saunders their secretary, and Brunel their engineer, put in separate demurrers, but the Vice-Chancellor overruled them without hearing the counsel for the plaintiffs, and ordered the defendants to answer on the ground that the bill made out a case, which gave the plaintiffs a clear title to some relief.—For the company it was argued that the remedy of the plaintiffs for a breach of the contract was at law; while it was argued, on the other side, that the plaintiffs could not proceed at law on the contract, because they had not got the certificate of Mr. Brunel to show that the works were completed. They could only proceed on the case, and, if they succeeded, then the whole of the accounts must be gone into, and every one who knew anything of the means provided by a court of law for that purpose, must be aware that such an account would prove abortive and defeat the plaintiff's claim. It was solely through the equitable machinery of this court that justice could be done between the parties.—The defendants contended that the plaintiffs had shown no ground for the interference of the court—none for relieving them from the necessity of asserting their claim in a court of law. His lordship asked for the pleadings, and postponed his judgment.

BRISTOL AND BIRMINGHAM RAILWAY.—Something like a retrograde movement in the progress of railways has taken place upon a branch of the Bristol and Birmingham (Midland) line, connecting the main branch with the ancient borough of Tewkesbury and the River Severn. When this line was first opened a single line of rails was laid down from the Ashchurch station (the nearest point) to the town of Tewkesbury—a distance of little more than two miles—and horse-power was employed for the purpose of working this branch line. Subsequently, however, as the traffic increased, and railways became more general, a small but perfectly efficient locomotive engine was placed upon the branch, and, up to the present year, the traffic was carried on by these means. The pressure of the times, however, operating upon this, as upon all other railway property, has led to the exercise of the utmost economy; and the consequence has been that the locomotive engine-power has been discontinued upon this branch, and, at the present moment, may be seen the now almost strange apparition of a railway train (first, second, and third-class in one carriage) drawn by a single horse to and from the town of Tewkesbury and the Ashchurch station of the Bristol and Birmingham Railway.

NIAGARA SUSPENSION BRIDGE.—A letter in the *Rochester Daily Advertiser* gives the following description of this work of genius:—Having seen several attempts at a description of the suspension bridge, and all more or less erroneous, I trust I shall be pardoned for a brief sketch relating to the said work as it now stands, being merely a temporary structure as compared with the original design. Early in the spring of 1847, while at dinner at the Eagle Hotel, in the village of Niagara Falls, there were present C. Elet, jun., the engineer of the bridge, the writer, and several other gentlemen, when the subject came up how the first wire was to be got over the river. One proposed the steam-boat, another a small boat to take a line across, another would throw a bombshell over with a cord attached to it, and severally other equally practicable projects were advanced, when Mr. Elet himself suggested the use of a rocket, by which he expected to throw his first line across the gulf. This seeming to be the end of propositions, Mr. Fisk, of your city, addressing Mr. Elet said, "With your leave, and a promise not to ridicule the idea if it should prove a failure, I will, in a more simple and cheaper mode, attempt to get a line across the gulf." This being agreed to, those present desired to know what method he should pursue to get a line across. "Well, gentlemen, I have not the least objection to tell you all about it, provided you adhere to the promised conditions, not to laugh at me. Now, gentlemen," said Mr. Fisk, "my plan and the instrument used will be the same kind used by Franklin to draw lightning from the clouds—an instrument that any ingenious schoolboy can make in an hour—a kite." Mr. Elet remarked that he did not see why it would not succeed, and gave his consent to have it tried. Mr. Fisk then called upon an intelligent boy by the name of Walsh, who soon had a kite constructed, and on the second trial threw a line across, making it fast on the opposite side, by doubling which a small rope was drawn over, and in six or seven doubles, strength sufficient was acquired to take over the first small cable of 36 wires. This was the one used to pass Mr. Elet over in his little iron car, and next himself and his lady, and many other persons, passed over on this slight fixture; since which the present structure has been reared, resting on wooden towers 50 ft. high, over which pass 14 cables, of the following dimensions—viz: Five of 36 wires each, five of 72, one of 125, and three of 150 wires—1115 wires in all. To these is the bridge suspended, and is capable of sustaining a weight of nearly 1000 tons, yet so light in its appearance to strangers, that some will not pass it, through fear of its instability, yet heavy teams pass it. Five at one time were on it, of Col. Mann's Circus; besides which many droves of fat cattle have passed it. It is now perfectly safe as a common thoroughfare, but will all give way to one of the grandest structures in the world, as soon as it is required for railway purposes, for which, from the exertions now being used by the directors and people on both sides, it seems likely to be required within a year or two. The railroad structure will require 16 cables of 6000 wires each, all laid straight—not twisted, as some have it—but wound with small wire, and when completed, with its massive stone towers, will sustain a weight of more than 6000 tons beyond its own weight, a structure worthy, as one of art, to stand by the side of Nature's grandest—the Falls of Niagara. For this and other improvements, contemplated or finished, are the public indebted to the Hon. Charles B. Stuart.

FOREIGN INTELLIGENCE.

SOUTH AUSTRALIA.—Adelaide journals to the 12th October have been received, and are chiefly occupied in detailing strictly local and unimportant matters. The *South Australian Register* notices that another "monster mine" has been discovered in the neighbourhood of the Kanmantoo mines; the mine is called Wheal Maria, in consequence of some presumed similarity to the rich Devonshire mine of that name. The ore is reported to be in large masses. The Enterprise Mining Company was progressing satisfactorily, the mine looking exceedingly encouraging. A valuable discovery has been made which, it is said, will realise all the hopes entertained of its productiveness. The old shares, in consequence, were in demand at 3*l.* 10s. and the new shares at 1*l.* 15s. The smelting works of the Burra Burra Mine, at Kooringa, were in full work, both smelting and refining being carried on with vigour. The following is the latest share list:—

Name.	Shares.	Amount.	Paid up.	Present Price.
Adelaide	2000	£5 0	£5 0	£1 6 0
Belvidere	640	5 0	3 10	3 10 0
Burra Burra	2464	5 0	5 0	157 0 0 to £155 0 0
Enterprise	1000	3 0	3 0	3 7 0
Greenock Creek	300	5 0	5 0	
Mount Remarkable	1000	—	22 10	
Montacute	100	55 0	55 0	
North Kapunda	4440	5 0	5 0	1 9 0
Paringa	8000	1 5	1 5	1 5 0
Port Lincoln	600	5 0	3 10	8 0 0 to 7 3 6
Princess Royal	400	50 0	41 0	35 0 0
Royal Mining Co.	5000	10 0	0 10	0 10 0
Wheal Gawler	1280	10 0	10 0	
Wheal Maria	—	—	—	4 10 0 to 4 0 0

WESTERN AUSTRALIA.—By the overland mail we have accounts from Swan River to the middle of November, by which we learn that the mining prospects of the colony are brightening—"ores of a richer nature, and in a softer strata, had been discovered."

NEW ZEALAND.—The accounts from Wellington come down to the 27th of Sept., from which we learn, that experiments had been lately tried for extracting ore from ironsand, found in the neighbourhood of Taranaki, and these had proved successful.

From Singapore the dates are to the 6th December. A body of Abyssinian coolies had been engaged by the Eastern Archipelago Company, owing to the difficulty of procuring labour at Labuan, and has just left Singapore *en route* for that place, where they would be employed to work the local mines.

CALIFORNIA.—Advices from the United States mention, that the arrival of gold dust from Chagres, brought by the *Empire City*, did not exceed $4,000,000; of this $327,050 was consigned, the rest being the property of the passengers. The same vessel brought a cargo of silks, tea, and porcelain from China, *viâ* San Francisco and Panama, consigned to Messrs. Livingston, Wells, and Co., of New York, being remarkable as the first merchandise received in that city by way of the Pacific. Private letters state that though money is in abundance in California, sickness is likewise there in all its destroying forms. The carpenters in San Francisco had struck for $16 a day for wages, although their employers were willing to give as much as $12. Chickens were selling at $5 the pair, potatoes 37½ cents. per lb., and all other things in proportion. At the Sacramento the diggings had fallen off very considerably—three out of every five of the gold-seekers returning sick. A circus was opened in San Francisco; gambling and dissipation of all kinds were running riot there; the miners working at the diggings not paying more than their expenses, while the speculators in the towns were receiving the gold, and living on their gains. Several of the emigrants had been murdered by marauding parties of the Indians. The firm of Messrs. Jones, Ball, and Poor, of Boston, had received from thence a single lump of gold, of the enormous weight of 6 lbs.

COAL AND LEAD IMPORTS OF THE UNITED STATES.

PHILADELPHIA, JAN. 4.—It is singular that, notwithstanding the immense coal-fields and products of Pennsylvania, the imports of foreign (British) coal should continue to increase. So with lead, the imports of which are very great, notwithstanding the vast lead regions of the west; but the truth is, lead from England and other parts of Europe can be received in the Atlantic ports much cheaper than the metal of the "far west." As further protective duties are sought on both these articles, I subjoin a few statistics of the foreign imports. They are from Washington, and official:—

LEAD.—Statement of the import of foreign lead into the United States from February 28, 1849, to December 28, 1849:—From Liverpool, London, &c., 89,962 pigs; from France, 19,591; from Spain, 65,316; from Holland and Belgium, 3965; from Austria, 4100—total, 182,934 pigs, or 12,195 tons, at 15 pigs to the ton, or equal to 365,868 American pigs. Of the above, New York has received 152,803 pigs, or 10,180 tons.

COAL.—The following is an official statement of the amount and value of coal imported into the United States during the year ending the 30th June, 1849:—From England, 63,079 tons, value $156,154; from Scotland, 1469 tons, value $2721; from Ireland, 600 tons, value $1437; British American colonies 131,565 tons, value $245,693; and from other places, 1500 tons, value $3277—total, 198,213 tons, of the value of $409,282.

The following table shows the imports of foreign coal into the United States annually, from 1821 to the 1st July, 1849. The duty on foreign coal under the present tariff is 30 c. to 45 c. per ton on board:—

1821	22,122	1836	108,432
1832	34,523	1837	153,450
1823	30,433	1838	129,083
1824	7,228	1839	181,581
1825	25,645	1840	162,867
1826	35,665	1841	155,394
1827	40,257	1842	141,526
1828	32,302	1843	41,163
1829	45,393	1844	87,073
1830	58,136	1845	85,771
1831	36,508	1846*	156,855
1832	72,978	1847†	148,021
1833	92,432	1848	196,251
1834	71,626	1849	196,213
1835	49,969		

* From Dec. 1, 1846, to June 30, 1847. † For the year ending June 30, 1848.

MANAGEMENT OF STEAM-ENGINES IN FRANCE.—A report of M. Lacrosse late Minister of Public Works, on the bill relative to the sale and employment of steam-boats, has just been distributed. The commission has inquired into the causes of the explosions which take place on railroads, both in France and in other countries. The commission proposes to augment the *maximum* of fines and the period of imprisonments. Every manufacturer who shall deliver a steam apparatus, of whatever kind or size, without its having been previously submitted to trial, shall be subjected to a fine varying from 100 f. to 1500 f; and the party who shall make use of such untried machinery, to a fine of from 25 f. to 500 f. Whosoever shall sail a steam-vessel without a permit of navigation also incurs a fine of 100 f. to 2000 f. In case of the offence being repeated, the fines shall be increased. Various fines are also imposed on the owners, makers, engine-men, and other *employes*, not only for contravention of the law as above-mentioned, but also for neglect in cleaning the boilers and other parts of the machinery.

ELECTRIC TELEGRAPH BETWEEN ENGLAND AND AMERICA.—We learn, from New York, that the projectors of an electric telegraph communication between that city and the Isle of Wight, will bring their plan before Congress at its present session. They propose to lay down a substantial insulated wire, of 36 fibres, coated one-half inch with gutta percha, and to guarantee its working with perfect integrity for 10 years. They offer to complete it in 20 months from the date of contract, for a sum not to exceed $3,000,000. The same company offer, within five years, and for $5,000,000, to lay down a similar line from the Mississippi to the Pacific.

A RAILWAY ON FIRE.—Our readers have heard of railway carriages being burnt, but probably they are not prepared to be informed of a line of railway itself being on fire. On a portion of the South Staffordshire Railway, in the immediate vicinity of Wednesbury, the strata of coal work their way out very near to the surface. During the formation of the line, the men employed in a cutting, 30 feet deep, came upon an old working of a mine, and latterly a fire has broken out in the cutting, immediately in the centre of the line. A number of navvies are at present employed in putting out the fire, which is quite red hot; and we presume that in course of time, by removing the vein of coal on fire, and piling the same with sand or clay, they will be enabled permenently to stop its course, so far as its interference with the railway is concerned.

ARRIVALS OF SPECIE.—The following arrivals of specie have just taken place from the countries mentioned:—The vessel *Java*, from Bombay, brought 7 cases of silver, consigned to order; the *Diamond*, from Callao, 1 box of gold, addressed to an eminent house, and 1 bar of silver, and 1 box of gold, consigned to the Bank of England; the *Highlander*, from Oporto, 4 cases of silver, consigned to order; the *Free-trade*, from Oporto, 2 cases of specie addressed, and 1 case consigned to order; the *Glenelg*, from Port Adelaide, Bombay, and the Cape of Good Hope, 5491 bags of copper, consigned to order, 1 case of specie from the Cape, addressed, and 16 boxes of silver from Bombay, consigned to order; the *Charles Brownell*, from Coquimbo and Valparaiso, 325 bars of copper, addressed to a firm of eminence; the *Parliament*, from Boston, United States, 600 bars of (Chili) copper, similarly addressed; the *Carnatic*, from Cuddalore, Madras, and the Cape, 1 box of specie from the latter place, consigned to order; the *Essex*, from Calcutta and the Cape, 1 box of specie from the latter place, addressed to a firm of eminence; the *Black Prince*, from Arica and Islay, 3000 bags of copper, addressed to a house of commercial eminence; and the vessel *Coldstream*, from Calcutta, 5 boxes of silver, consigned to order.

STEAM TO INDIA AND CHINA, VIA EGYPT.—Regular MONTHLY MAIL (steam conveyance) for PASSENGERS and LIGHT GOODS to CEYLON, MADRAS, CALCUTTA, PENANG, SINGAPORE, and HONG-KONG.

THE PENINSULAR AND ORIENTAL STEAM NAVIGATION COMPANY

BOOK PASSENGERS and RECEIVE GOODS and PARCELS for the ABOVE PORTS by their steamers—starting from Southampton on the 20th of every month; and from Suez on or about the 10th of the month.

BOMBAY.—Passengers for Bombay can proceed by this company's steamers of the 29th of the month, to Malta, thence to Alexandria by her Majesty's steamers, and from Suez by the Honourable East India Company's steamers.

MEDITERRANEAN.—MALTA—On the 20th and 29th of every month. CONSTANTINOPLE—On the 29th of the month. ALEXANDRIA—On the 20th of the month.

SPAIN AND PORTUGAL.—Vigo, Oporto, Lisbon, Cadiz, and Gibraltar, on the 7th 17th, and 27th of the month.

For plans of the vessels, rates of passage-money, and to secure passages and ship cargo, apply at the company's offices, No. 122, Leadenhall-street, London; and 57, High-street, Southampton.

UNION BANK OF AUSTRALIA, 38, Old Broad-street.—The Directors having this day declared a DIVIDEND of 3 per cent. for the half-year, upon the entire paid-up capital of the bank, together with a bonus out of the profits of the half-year, of 7s. 6d. per share on the 32,000 paid-up shares, and a like proportion of bonus on the £2 10s. per share, paid-up on the 8000 shares of the third series, payable on the 5th February next, free of income-tax.—Notice is hereby given, that the Transfer-books will be closed from the 22d inst. until that date.

By order of the Board,
London, Jan. 21, 1850. SAMUEL JACKSON, Secretary.

LOANS ON DEBENTURES.—The CALEDONIAN RAILWAY COMPANY are prepared to RECEIVE TENDERS OF LOANS, in sums not less than £500.—Applications to be made or addressed to this office.

By order,
125, George-street, Edinburgh, Dec. 1, 1849. D. RANKINE, Treasurer.

TO PUBLIC COMPANIES, MERCHANTS, & BROKERS.—The ADVERTISER, who can command considerable security, well acquainted with business, and with the French language, is desirous of such an ENGAGEMENT with a PUBLIC COMPANY, MERCHANT, or STOCKBROKER, as would be acceptable to a man of education, who is an able correspondent, an expert calculator, good writer, and one who unites to great zeal unceasing diligence.—Letters to "A. Z.," Post-office, 40, Fenchurch-street, will be promptly attended to.

JOSEPH DEELEY, of the LONDON and NEWPORT IRON-WORKS, NEWPORT, MONMOUTHSHIRE, respectfully recommends to the notice of the public his PATENT FOUNDRY FURNACE, which has been effectually tested, and is now in constant use at the above works, where it may be seen by all persons interested. This furnace operates without the aid of any motive-power to impel the air. An immense saving is the consequence, both in erecting and working. One-third of the coke usually consumed is more than sufficient; a loss of only 22 lbs. of iron to the ton is sustained in smelting. It is also available for large or small work of every description, and may be tapped out as required.

The IRON MELTED in this furnace also undergoes an extraordinary improvement in quality.

SCOTCH PIG and SCRAP are returned equal to cold-blast in point of strength, and capable of being chipped or filed with the greatest facility.

FOUNDRIES USING this FURNACE may exist in the most densely populated cities, without causing the least nuisance—all smoke, dust, and noise being avoided.

The Continental, Colonial, Scotch, and Irish PATENT RIGHTS are for disposal; the Patentee would also treat for the purchase of Patent Rights, or Grant Licenses to manufacture for certain counties or districts in England or Wales.

APPLY TO THE PATENTEE AS ABOVE.

OILS.—BROTHERTON & CO. beg to call the attention of all parties EMPLOYING STEAM POWER to their PATENT PURIFIED OILS, for the economical working of STEAM-ENGINES and MACHINERY and BURNING IN LAMPS. The adoption of its use effects a saving of 25 per cent. over any other oil, and its properties are such as to greatly preserve machinery bearings.

BROTHERTON & CO.,
HUNGERFORD-WHARF, CHARING-CROSS, LONDON.

UNION BANK OF AUSTRALIA.

At a special meeting of proprietors, held on Monday last, the statement of accounts was presented, showing—Balance of undivided profits amounting to 62,175*l.* 1s. 11d., and a reserved fund of 68,219*l.* 8s. 1d. A dividend was declared at the rate of 6 per cent. per annum, with a *bonus* of 7s. 6d. per share, and the report and accounts were adopted unanimously. Very little discussion took place, but the CHAIRMAN, in explaining the situation of the establishment, as one warranting the distribution of the *bonus*, analysed the balance of undivided profit, and traced the improved condition of business during the last two years. In answer to questions, it was intimated that the bank possesses 110,000*l.* invested in Government securities, and that the directors have no intention at present of increasing its working capital by further calls on the 2*l.* 10s. paid shares. A branch establishment is being organised at Adelaide, but no advice has yet been received of the commencement of active operations. Mr. H. Buckle was elected to fill the vacancy at the board.

AUSTRALIAN AGRICULTURAL COMPANY.

The annual meeting of proprietors was held at the offices, yesterday, the report and accounts presented at which were unanimously carried. It transpired that, although the surplus revenue, arising from the operations of the undertaking, did not permit the directors to recommend a dividend, still the progress making was in a measure satisfactory; and as every endeavour was being enforced to exercise rigid economy, it was considered that general prospects might fairly be regarded as showing improvement. The loss of sheep had most materially diminished, and had never represented so low an amount since 1840. The discovery of a new and valuable seam of coal on the property of the company was expected to yield most beneficial results. The scheme of emigration connected with the sale of land had not been attended with success, but purchasers of sections had been found to some extent in the colony. Before the termination of the meeting, two or three of the shareholders offered practical suggestions to the board, which were received, on the whole, in a favourable manner. These suggestions comprised the preparation of more detailed accounts, especially in the shape of a regular profit and loss statement; the experiment of Chinese coolie servants, with the view of reducing the large item of labour expenditure in New South Wales; and the appointment to vacant seats in the direction of individuals who had derived experience from recent residence in Australia. All these points were discussed with much good feeling, and the Governor promised that they should have proper attention.

New Patents.

SPECIFICATION ENROLLED DURING THE PAST WEEK.

JOHN HOLLAND, Larkhall Rise, Clapham, gentleman: For a new mode of making steel. (Being a communication). Mr. Holland proposes to convert wrought-iron articles into steel by exposing them in a furnace to the action of alternate layers of carbonized and uncarbonized materials; the latter consisting of silk-worms, silk cocoons, silk waste, &c., which the patentee torrefies, or highly dries, without carbonization, then reduces to powder, and stores it in air-tight vessels until required for use. When, for instance, it is desired to convert the top surface of rails or ploughshares to the depth of an inch, the patentee spreads over the surface of an oven or furnace a layer, of a ½ inch deep, of coal-dust, coal-slack, or coke-powder, or of a mixture of these substances, and above that a layer, of equal depth, of the torrefied substance, upon which the iron articles are placed, with their surfaces to be steeled in contact with the torrified substance, care being taken to cover such portions as are not to be steeled with clay. The furnace is filled with a series of layers of these different materials, and heated to the ordinary temperature, until the conversion is effected, which will be in a much shorter time than has hitherto been practicable, and may be ascertained by testing in the usual way. To convert iron ore into steel, it is first reduced to pieces of the size of a nut, wallnut, or egg, and then well washed to free it from dirt, and subsequently enveloped in a paste composed of equal parts of clay and slack-lime, mixed with water, and subjected to heat, after which it is submitted to the above cementing process in crucibles, or close vessels.

Claim.—The application of silk-worm chrysallides, cocoons, the silk-worm and its products, and the refuse of the same, to the manufacture of steel.

LIST OF PATENTS GRANTED DURING THE PAST WEEK.

M. Laird, of Birkenhead, gentleman, for improvements in the construction of metallic ships or vessels, and in materials for coating the bottoms of iron ships or vessels, and in steering ships or vessels.

W. Beadon, jun., of Taunton, Somerset, gentleman, for improvements in conveying away, or decomposing smoke, and products of combustion from stoves or grates, and in ventilating rooms of residences.

G. Simpson, of Buchanan street, Glasgow, civil and mining engineer, for a certain improvement or improvements in the machinery, apparatus, or means of raising, lowering, supporting, moving, or transporting heavy bodies.

W. Wood, of Over Darwin, Lancashire, carpet manufacturer, for improvements in the manufacture of carpets and other fabrics.

C. Nickels, of York-road, Lambeth, Surrey, gentleman, for improvements in the manufacture of woollen and other fabrics.

W. Westrap, of Wapping, Middlesex, miller and biscuit baker, for improvements in cleaning and grinding corn or grain, and in dressing meal or flour.

Joseph Long and James Long, of Little Tower-street, London, mathematical instrument makers, and R. Pattenden, of Nelson-square, Surrey, engineer, for an improvement in instruments and machinery for steering ships, which is also applicable to vices, and other instruments and machinery for obtaining power.

A. Reinhard, of Leicester-street, Leicester-square, Middlesex, chemist, for improvements in preparing oils for lubricating purposes, and in apparatus for filtering oil and other liquids.

DESIGNS FOR ARTICLES OF UTILITY REGISTERED.

J. Gray, and H. Lawson, Sheffield, continuous stream enama-fountain syringe.
R. J. Blyth, Eagle Foundry, Norwich, corn-thrashing drum.
J. Roberts, Eastcheap, ventilating flour-pot.
H. C. James, Oxford-street, collapsible trunk or portmanteau.
J. S. Phene, Cambridge, hook and eye,
J. Welch, and J. Margetson, Cheapside, equestrian or driving poncho.
H. Burrage, Bath-buildings, triangular ventilating top.
J. E. Mac Cabe, Parliament-street, covers and backs for binding, or the temporarily binding pamphlets, &c.—*Mechanics' Magazine.*

PATENT IMPROVEMENTS IN CHRONOMETERS, WATCHES AND CLOCKS.

E. J. DENT, 82, Strand; 33, Cockspur-street; 34, Royal Exchange (clock tower area), Watch and Clock Maker, BY APPOINTMENT, to the Queen and his Royal Highness Prince Albert, begs to acquaint the public, that the manufacture of his chronometers, watches, and clocks, is secured by three separate patents, respectively granted in 1836, 1840, 1842. Silver lever watches, jewelled in four holes, 6 gs. each; in gold cases, from £8 to £10 extra. Gold horizontal watches, with gold dials, from 8 gs. to 12 gs. each.

DENT'S PATENT DIPLIEDOSCOPE,

or Meridian Instrument, is now ready for delivery.—Pamphlets containing a description and directions for its use 1s. each, but to customers gratis.

THE PATENT OFFICE AND DESIGNS REGISTRY.
No. 210, STRAND, LONDON.

INVENTORS will receive (gratis), on application, the OFFICIAL CIRCULAR OF INFORMATION, detailing the eligible course for PROTECTION of INVENTIONS and DESIGNS, with Reduced Scale of Fees.

Messrs. F. W. CAMPIN and CO. offer their services, and the benefit of many years' experience, in SECURING PATENTS and REGISTRATIONS OF DESIGNS, with due regard to VALIDITY, economy, and dispatch—assisted by scientific men of repute.

Also, in MECHANICAL and ENGINEERING DRAWINGS, whether connected with Patents, Railways, or otherwise, by a staff of first-rate draftsmen.

Application personally, or by letter, to F. W. Campin and Co., No. 210, Strand (corner of Essex-street).

WARRANTED SAFETY FUSE.—W. BRUNTON & CO beg to inform Mine Agents, Contractors, and Merchants, that having completed their Machinery for the MANUFACTURE of the ABOVE ARTICLE, they are enabled to offer FUSE of a very superior quality, and at considerably reduced prices.

W. B. & Co. can SUPPLY FUSE in ANY LENGTHS that may be required.

Penhellick Fuse Factory, Pool, Truro, Cornwall.

TESTIMONIALS.

Messrs. W. BRUNTON & Co. *North Pool Mine, Nov.* 27, 1849.

GENTLEMEN,—We have had your Safety Fuse in constant use during the last seven months, and have much pleasure in expressing our own satisfaction with it, and in being able to tell you that we have not had a single complaint of your Fuse made by any of our men during the whole period—though they are particularly instructed to return any bad materials which may be supplied to them.

JAMES EVANS, Manager, FREDERICK EVANS,
JOHN NANCARROW, HENRY JAMES.

Messrs. W. BRUNTON & Co. *Tincroft Mine, Nov.* 27, 1849.

GENTLEMEN,—Since last March, when you commenced manufacturing Safety Fuse, we have had Fuse of your make in daily use in all parts of our mine, and can with strict impartiality state that the article supplied by you has been excellent. In proof of this we may mention, that during the whole of that time we have not had a single accident of any description.

PETER FLOYD, Manager, JOHN THOMAS,
THOMAS STAINSBY, HENRY HOCKEN,
THOMAS LEAN, RICHARD MARTIN.

Messrs. W. BRUNTON & Co. *Wheal Agar Mine, Nov.* 28, 1849.

GENTLEMEN,—There has been a good deal of your Fuse used at our mine, and we can safely pronounce it to be as good an article as we ever saw.

ALEX. EUDEY, Manager, JOSEPH EUDEY.

Messrs. W. BRUNTON & Co. *South Roskear Mine, Nov.* 29, 1849.

GENTLEMEN,—Your Fuse is a capital article, so far as our experience of it goes. It is well made, and certain in its operation. The men have brought no complaints of it, nor has a single accident occurred with it. WILLIAM THOMAS, JOHN DUNKIN.

Messrs. W. BRUNTON & Co. *North Roskear Mine, Nov.* 30, 1849.

GENTLEMEN,—All the Fuse you have sent to this mine, during several months past, has been as good as we have ever had from the other Fuse factories. There has been no fault found with it, nor has there been any accident in using it.

JOSEPH VIVIAN, Manager. JOHN HODGE.

Messrs. W. BRUNTON & Co. *Cook's Kitchen Mine, Nov.* 29, 1849.

GENTLEMEN,—We very cheerfully give our testimony to the good quality of your Fuse—for eight months we have used it, and no accident has occurred.

JOSEPH VIVIAN, Manager, JOHN IVEY,
W. G. HILL, RICHARD BENNETTS.

Messrs. W. BRUNTON & Co. *Carn Brea Mine, Nov.* 29, 1849.

GENTLEMEN,—We have used 9000 coils of your Fuse in our mine in the course of the last eight months; and have pleasure in stating that not a single case of accident has arisen therefrom, and we consider your Fuse as good as any that is made.

R. H. PIKE, Purser, ABSALOM BENNETTS,
JOHN LENTEN, } Managing JOHN VIVIAN,
JAMES MINERS, } Agents. JOHN JAMES,
WILLIAM ROBERTS, JOHN DAW.

Messrs. W. BRUNTON & Co. *Penhellick Fuse Factory.*

GENTLEMEN,—We have used, and are still using, your Fuse, and have no hesitation in expressing our conviction that it is, in all respects, entitled to the character of *Safety* Fuse—being as good an article, and as safe in use as any we have seen.

WILLIAM JEFFERY, } Lanarth Mine.
JOSEPH MICHELL, }
WM. H. VERRAN, East Wheal Fortune.
WILLIAM WILLIAMS, Manager,
FRANCIS BENNETTS,
JAMES WILLIAMS, } Wheal Friendship Mine.
JOSEPH PEARSE,
FRANCIS KENT.

Messrs. W. BRUNTON & Co. *Prestonpans Colliery, Edinburgh, Sept.* 17, 1849.

GENTLEMEN,—The miners inform me that the Fuses are of excellent quality, and have not lost a single shot since the commencement; while, with some of a very similar appearance we used before, nearly half the charges missed fire. JOHN GRIEVE.

SEA, FIRE, LIFE ASSURANCE OFFICE,
CONNECTING THE MINING INTERESTS OF ENGLAND AND WALES.
(ESTABLISHED BY ACT OF PARLIAMENT.)
31, *CORNHILL, LONDON.*

Capital £100,000, in shares of 20s. each, to be paid in full on allotment, bearing a guaranteed interest of 5 per cent. in perpetuity (irrespective of further dividends) upon the paid-up capital.

Application for shares to be addressed to the Directors, at the offices of the Society. Marine, fire, and life assurances granted on the most liberal terms.

Immediate and deferred annuities granted on terms especially advantageous for investment of capital. By order, AUG. COLLINGRIDGE, Managing Director.

SPECIMENS OF THE RATES OF PREMIUM FOR ASSURANCE OF £100.

Age.	With Profits.	Age.	Without Profits.
21	£1 19 3	20	£1 14 6
30	2 11 3	30	2 5 1
40	3 8 3	40	3 0 2

The whole of the Profits from the Life Department divided amongst the Policy holders. All Life Policies indisputable.—All Life Policies free of stamp duty.

ALFRED BURT, Actuary.

*** WANTED, AGENTS and MEDICAL REFEREES for the PRINCIPAL TOWNS in the KINGDOM.
COUNTY SURVEYORS ALSO REQUIRED.

SEA, FIRE, LIFE ASSURANCE SOCIETY.—Notice is hereby given, that the HALF-YEARLY DIVIDEND on the capital stock of this society, at the rate of 5 per cent. per annum, due on the 31st ult., will become PAYABLE on or after the 30th inst. By order of the court of directors,
31, Cornhill, London, Jan. 9, 1850, AUG. COLLINGRIDGE, Managing Director.

SEA, FIRE, LIFE ASSURANCE SOCIETY.—Notice is hereby given, that the REGISTERED SHARE CERTIFICATE of this society will be DELIVERED on application, on production of the share receipt.

By order of the court of directors,
31, Cornhill, London, Jan. 9, 1850. AUG. COLLINGRIDGE, Managing Director.

AGENTS WANTED IN DEVON, CORNWALL, AND NORTH AND SOUTH WALES.

SCOTTISH AMICABLE MUTUAL LIFE ASSURANCE SOCIETY.—ESTABLISHED 1826.
LONDON OFFICES—No. 43, LOMBARD-STREET.
PRESIDENT.
THE MOST NOBLE THE MARQUIS OF DALHOUSIE.
VICE-PRESIDENTS.
HIS GRACE THE DUKE OF BUCCLEUCH.
JOHN CAMPBELL COLQUHOUN, Esq., of KILLERMONT.

A Policy of £1000, opened with this Society in 1840, was, in 1846, by the addition of £3 per annum on every £100, increased to £1120. And, by the above principle of this Society, an addition of 2 per cent. per annum, upon the above accumulated sum of £1120, gives, as the value of the original policy of £1000,

In 1849, if it then becomes a claim				£1187 4 0
1850	,,	,,		1209 12 0
1851	,,	,,		1232 0 0
1852	,,	,,		1254 8 0

TABLE—*Illustrating Accumulation of Additions on £1000 Policy on Society's Plan:*—

Amount with Additions.	Sum of Premiums paid according to Ages at entry.			
At end of Years.	At 2 per cent. per ann.	20.	27.	34.	41.
6	£1120 0 0	£145 5 0	£167 8 4	£196 5 10	£235 19 8
13	1276 16 0	290 10 0	334 16 8	392 11 8	471 18 4
27	1659 6 7	581 0 0	669 13 4	785 3 4	943 16 2
55	2802 10 10	1162 0 0	—	—	—

New entrants admitted to every advantage.
Immediate, deferred, and survivorship annuities granted.
Every facility afforded to assurers.
THE WHOLE PROFITS DIVIDED AMONG THE ASSURED.
Manager—WILLIAM SPENS.
Resident Secretary in London—J. E. C. KOCH.

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